S. HRG. 98-299 PT. 2

INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

HEARINGS

BEFORE THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

NINETY-EIGHTH CONGRESS

FIRST SESSION

PART 2

JULY 13, 14, AND 20, 1983

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE
24-862 O WASHINGTON: 1983

J84-38

JOINT ECONOMIC COMMITTEE

(Created pursuant to sec. 5(a) of Public Law 304, 79th Congress)

SENATE	HOUSE OF REPRESENTATIVES
ROGER W. JEPSEN, Iowa, *Chairman*	LEE H. HAMILTON, Indiana,
WILLIAM V. ROTH, Jr., Delaware	*Vice Chairman*
JAMES ABDNOR, South Dakota	GILLIS W. LONG, Louisiana
STEVEN D. SYMMS, Idaho	PARREN J. MITCHELL, Maryland
MACK MATTINGLY, Georgia	AUGUSTUS F. HAWKINS, California
ALFONSE M. D'AMATO, New York	DAVID R. OBEY, Wisconsin
LLOYD BENTSEN, Texas	JAMES H. SCHEUER, New York
WILLIAM PROXMIRE, Wisconsin	CHALMERS P. WYLIE, Ohio
EDWARD M. KENNEDY, Massachusetts	MARJORIE S. HOLT, Maryland
PAUL S. SARBANES, Maryland	DAN LUNGREN, California
	OLYMPIA J. SNOWE, Maine

BRUCE R. BARTLETT, *Executive Director*
JAMES K. GALBRAITH, *Deputy Director*

CONTENTS

WITNESSES AND STATEMENTS

WEDNESDAY, JULY 13, 1983

	Page
Lungren, Hon. Dan, member of the Joint Economic Committee, presiding: Opening statement	1
Adams, F. Gerard, professor of economics, University of Pennsylvania	2
Patrick, Hugh, professor of Far Eastern economics, Yale University	12
Tanaka, H. William, senior member, Tanaka, Walders & Ritger	44
Trezise, Philip H., senior fellow, the Brookings Institution	71

THURSDAY, JULY 14, 1983

Scheuer, Hon. James H., member of the Joint Economic Committee, presiding: Opening statement	103
Rasmussen, David W., professor of economics, Florida State University, Tallahassee, Fla	104
Ady, Robert M., executive vice president, the Fantus Co., Chicago, Ill	129

WEDNESDAY, JULY 20, 1983

Wylie, Hon. Chalmers P., member of the Joint Economic Committee, presiding: Opening statement	151
Zschau, Hon. Ed, a U.S. Representative in Congress from the 12th Congressional District of the State of California	152
Naisbitt, John, author of "Megatrends" and chairman, Naisbitt Group, Washington, D.C	177
Leveson, Irving, director, economic studies, Hudson Institute, New York, N.Y	184
Fisher, John F., senior vice president, Banc One Corp., Columbus, Ohio	192
Chambers, Walter R., executive vice president, the Ohio Co., Columbus, Ohio	196

SUBMISSIONS FOR THE RECORD

WEDNESDAY, JULY 13, 1983

Adams, F. Gerard: Prepared statement	6
Patrick, Hugh: Prepared statement	19
Tanaka, H. William: Prepared statement, together with appendixes	48
Trezise, Philip H.: Prepared statement	75

THURSDAY, JULY 14, 1983

Ady, Robert M.: Prepared statement	130
Rasmussen, David W.: Prepared statement	107

WEDNESDAY JULY 20, 1983

Leveson, Irving: Prepared statement	187
Naisbitt, John: Prepared statement	181
Steinberg, David J., president, U.S. Council for an Open World Economy, Alexandria, Va.: Written statement	212
Zschau, Hon. Ed: Prepared statement	157

INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

WEDNESDAY, JULY 13, 1983

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to recess, at 10:06 a.m., in room 2168, Rayburn House Office Building, Hon. Dan Lungren (member of the committee) presiding.

Present: Representatives Lungren, Holt, and Scheuer.

Also present: James K. Galbraith, deputy director; Charles H. Bradford, assistant director; and Mark R. Policinski, Mary E. Eccles, and William R. Buechner, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE LUNGREN, PRESIDING

Representative LUNGREN. I think we ought to start. First of all, gentlemen, let me welcome you here for this fourth in our series of hearings on industrial policy.

The economic history of the United States is unequaled in the annals of mankind. In less than 200 years, this Nation was transformed from wilderness to the economic and political engine of the world. Our achievements were the standard by which all countries were measured. The progress of civilization was oftentimes ruled by the accomplishments of the United States.

We must recognize that the world has changed. There has been no greater change than our position in the world economy. We obviously no longer dictate world trade, but instead, we compete for it.

The rampant inflation of the 1970's and the resulting unemployment of the 1980's has caused a revolution in our economic thinking. We are seeking answers not only from within, but solutions from entirely different cultures which challenge our traditional relationship between government and business.

Perhaps the country most responsible for our new position in world trade and most exemplary of our search for new answers is that of Japan. It is commonly believed that the Japanese economic success over the past 20 years is due to a Japanese industrial policy whereby the Japanese Government has exerted considerable control over the private sector. This Japanese industrial policy is supposedly responsible for Japanese supremacy in certain industries, most notably, autos. It is also supposedly responsible for providing the Japanese with a relatively noninflationary economic growth that is the envy of all developed countries.

However, as American scholars have investigated Japanese industrial policy, there is increasing evidence that there is more myth than reality to America's view of how the Japanese run their economy.

This hearing today will help determine what really is Japanese industrial policy and would it be transferable to the U.S. economy? These are crucial questions because the industrial policy described by advocates in this country is far different socially, politically, and economically from the history of the United States. Advocates are fond of saying that the United States already has an industrial policy and they just want to extend it a little. But, hopefully, we would not kid ourselves—the similarity between our present, so-called industrial policy and the one described often by advocates today is slight and illusory.

Because Japan is the example of industrial policy to be followed by the United States, we must separate myth from reality concerning Japanese industrial policy. There are decades of economic performance riding on whether or not we should establish an industrial policy and we must strive to find the truth.

I believe that this panel is eminently qualified to help us get at the truth and we're fortunate to have them here today.

Gentlemen, I thank you for coming. I would just ask you if you could please try and confine your remarks, your opening remarks, to 10 minutes apiece so that we can, hopefully, have some opportunity for some exchange of views. And I understand that one of our panelists has to leave by a quarter of 12, so we'll try and move along.

The first panelist is F. Gerard Adams, professor at the University of Pennsylvania. We thank you for taking the time to appear before us and if you wish to have your prepared statement entered into the record, we'll do so.

In any event, you may proceed as you wish.

STATEMENT OF F. GERARD ADAMS, PROFESSOR OF ECONOMICS, UNIVERSITY OF PENNSYLVANIA

Mr. ADAMS. Thank you very much. I would like to thank the committee for giving me the opportunity to speak on this topic and I guess I have to thank the first initial of my last name, A, for having the first word on this topic.

I am going to be talking briefly and trying to summarize conclusions. There is a brief prepared statement. But I would also like to say that this testimony is based on a fairly large study that was done at the University of Pennsylvania. Some of this work is summarized in a book, "Industrial Policies for Growth and Competitiveness." Quite specifically, I will avoid going into details. There is a chapter in that volume that was written by myself and Professor Ichimura from Kyoto University. It is chapter 13. It deals in some detail with the structure of Japanese policies.

The first thing one has to ask is about the approach of Japanese policy. We looked at industrial policy on a worldwide basis. It is quite clear that in Japan, more than any other country, industrial policy is based on a comprehensive, forward-looking perspective on the goals of the economy and how to get there. By the way, let me say that that

is by no means a new view of the world, that the Japanese have thought and planned ahead for their industrialization since the days of the Meiji.

The way in which Japan looks ahead is perhaps best illustrated by the debate during the 1950's about the future directions of the Japanese economy. The question that people thought about is, Should it be a labor-intensive economy consistent with the, then, large available supplies of labor, or should it be a capital-intensive industrial society, even though capital was still scarce?

MITI, the Ministry of International Trade and Industry, opted at that time for an integrated industrial structure, which would be competitive in world markets and which would take advantage of the productivity gains which were achievable through the use of modern high technology.

This is not, of course, a new thought in Japan. Indeed, MITI's views at that time were really extensions of ideas that the Japanese had had even before World War II. But this sort of view was built into what has been called the visions of MITI, which are broad overviews of the goals and needs of the Japanese economy.

The aims of the vision were then incorporated into a broad range of policies. Some of these are quite explicit regulations. Some are simply preferential financing, formally arranged or by way of encouraging the banking system to provide financing preferentially, as the banking system serves as a main source of industrial financing in Japan. And, of course, other regulations were simply what sometimes have been termed "administrative guidance."

It's clear that the close relationship between Japanese Government Ministries, the banks, and the business community made possible a degree of collaboration which could be closely targeted on the job to be carried out.

Now having said that, I think I'll be the first, but certainly not the last here today, to say that it would be a mistake to attribute all of the spectacular development of Japanese industry to industrial policy. There are many circumstances which together account for postwar Japanese development. The recovery offered opportunities for installing technologically advanced industry and its political stability, its high savings rates, and highly educated and competitive and cooperative labor force, also helped.

And, moreover, I think that we can point to many cases where private enterprises, with little or no government aid, are responsible for some of the spectacular successes of Japanese industry.

So by no means would I imply that all or even a very major part of the Japanese growth is attributable to policy. On the other hand, there is lots of evidence that industrial policies achieved many of their objectives. If you analyze the changes in Japanese industrial structure, you can see clearly the shift toward heavy and high technology industry which is what the allocations of funds were trying to achieve. You see the growth of the industries which the Japanese wanted to develop. And more recently, you see the phasing out of certain industries which they recognized had to decline.

Japanese industries did achieve the low cost scale of operations. They did become highly competitive in world markets. All in all, I

think one can say that Japanese industrial policies were successful and the objectives were achieved. And perhaps one should recognize that the success was considerably greater in the manufacturing industries than it is in other parts of the Japanese economy.

More recently, we have entered a new stage during the last 3, 4, or 5 years. The visions of MITI have suggested the need to go to what the Japanese have called the knowledge intensive industries. And as part of this effort, somewhat different than in the past, there has been a massive allocation of funds going toward creating the research base and developing the manufacturing processes of the new high technology industries. The efforts in microelectronics toward the fifth generation computer are an example.

In my opinion, it's going to be a good bit more difficult to achieve objectives in this aspect of industrial development than it was in simply catching up to the rest of the world in the more traditional mass production industries. But there is already evidence of significant successes, the 64K chip, for example, and many American firms fear that Japanese industries will take over additional markets, particularly in the high-tech areas.

Now let me turn briefly to the implications for the United States. I think we have to recognize, and certainly our studies suggest, that industrial policy is very much a reflection and an outgrowth of each nation's unique relationship between business and government.

Japanese industrial policy is no exception. The Japanese model depends on the relationship of mutual support between business and government. Japanese policies would not survive wholesale transplantation from Japan to the United States, even if we were willing to accept some of the direct public sector intervention which occurs in Japan.

There are some important lessons in the Japanese experience. There are some policies which I think would be very useful for the United States. The first one of these is this concept of the visions of MITI. They have undoubtedly been useful as a basis for telling the public sector, and the private sector also, which are the areas of priority in a very forward-looking, dynamic kind of sense. And they would offer a similar opportunity in our own economy.

I'm quite certain that we would not want to establish a system of formal industrial planning. I'm strongly opposed to that. But today we lack the perspective on what our future industrial structure is likely to be and, more important, we lack the perspective on what our future industrial structure ought to be.

I would say the first element that we could usefully transplant would be this notion of the visions of MITI, a comprehensive study of the prospects and needs of U.S. industrial structure. I would call it "Perspectives on American Industry."

Such a perspective would visualize what kind of an economy the United States should aim for in 1980–90, should ask where are we going to have comparative advantage. I would visualize this as a public and private project, which would probably call for multidimensional priorities serving as guidelines for public policy and for business investment.

Now the second major lesson from the Japanese experience is that policies, particularly incentives or preferential financing, may make a contribution toward achieving industrial objectives.

It's highly unlikely that we could successfully develop a close relationship which it is said exists between business and government in Japan. I doubt that administrative guidance would have any chance of working in the United States. But we would want to develop a program that includes tax incentives, preferential financing, research and development contracts. These things are entirely feasible within the context of a free enterprise economy. Indeed, they take advantage of, and should take advantage of, private risk-taking and decisionmaking.

Tax incentives for investment for research and development can be further improved. Funding should be directed not only toward high tech industries, but particularly toward the modernization of traditional industries which might disappear unless new technologies can be introduced. There is need for a major effort for industrial infrastructure, and for education as well.

Of course, the question will be asked about targeting and I would say that such a policy would call for some industrial or sector targeting. But it's important to leave the incentives general, allowing scope for private decisionmaking. Financing could be provided through an industrial development bank. Japan does have institutions of that kind. We could gain significantly from them.

I would like to close my brief remarks on a final comment. There is, I think, also a lesson to be learned with respect to trade policy. There's no doubt that Japan has used considerable protectionism to develop its domestic industries to a viable scale. And, indeed, there are still places where American industries charge, I think with some basis, protectionism. There is still protectionism in one form or another.

But I think a very important thing about Japanese policy has been that the objective has not simply been to protect industries. The objective has been to create industries that are going to be viable in world export markets. In other words, in the final analysis, the critical criterion has been in export orientation. It's very important that we follow a similar view.

Occasionally, we may find that trade barriers may be necessary to temporarily protect a domestic industry in difficulty. But widespread protectionism would risk creating in the United States industries which are inefficient and noncompetitive in world markets.

The aim of Japanese policy was to create industry that was viable in the world market. Viability in the world market is a good criterion for judging the economic justification of our own institutions as well.

I'll stop at that. Thank you.

[The prepared statement of Mr. Adams follows:]

Prepared Statement of F. Gerard Adams

Japanese Industrial Policy—Any Lessons for the United States?*

In the past few years the performance of the United States economy has fallen far short of our hopes and expectations. Even when the current business recovery will have reached its peak, many problems of industrial structure and competitiveness will remain. Yet, there is little consensus on whether we should have an industrial policy and on what form it should take. We cannot expect to simply transfer industrial policies from other countries, from Japan for example, but there is much to be learned from the foreign experience and there are features of Japanese policy which may be adapted to the American scene. The U.S. economy could benefit greatly from a study of the "Perspectives for American Industry" like the so-called "visions" of MITI, and from industrial incentive policies implementing the results of such a study.

Japanese Industrial Policy—The Approach

Industrial policy in Japan, more than in any other country, is based on a comprehensive perspective on the goals of the economy. Since the War, goal

---

*These comments are based on the results of a research program on industrial policy at the Department of Economics of the University of Pennsylvania. Some of this work is summarized in a recent book, F. Gerard Adams and Lawrence R. Klein, Industrial Policies for Growth and Competitiveness, Lexington, Mass., Lexington Books, D.C. Heath and Co., 1983.

formulation has gone through a number of phases. It is perhaps best illustrated by the debate during the 1950s about the future directions of the Japanese economy. Should it be a labor intensive economy consistent with the then large available supplies of labor or a capital intensive industry even though capital was still scarce? MITI (the Ministry of International Trade and Industry) opted for an integrated industrial structure which would be competitive in international markets and which could take advantage of the productivity gains of modern high technology. Such a view was built into the "vision" of MITI, a broad overview of the goals and needs of the Japanese economy. The aims of the vision were then incorporated into a very broad and diverse range of policies, some of them explicit regulations, others taking the form of preferential financing, and others in the form of administrative guidance. The close relationship between Japanese government ministries, the banks which finance industrial investment, and the business community made possible a degree of collaboration which could be closely targeted to the job at hand.

It would be a mistake to attribute all of the spectacular development of Japanese industry in domestic and international markets to industrial policy. Many circumstances operated together to account for post war Japanese economic development. The period of economic recovery offered opportunities for building modern technologically advanced industry. Japan's political stability, high savings rate, and highly educated and cooperative labor force were among other positive factors. Private enterprises, many of them operating with little or no government aid, are responsible for many of the greatest successes of Japanese industry. On the other hand, there is evidence in many directions that the industrial policies achieved many of their objectives. For example, an analysis of changes in Japanese industrial

structure shows clearly the shift toward heavy and high technology industry. Allocations of funds appear to have been influential in expanding industries selected for development and in phasing out these that needed to decline. Japanese industries did achieve low cost scale of operation and have become highly competitive on world markets. All in all, industrial policies appear to have been successful, more so in newly established manufacturing industries than in other sectors of the economy.

More recently, the "vision" of MITI has suggested the need to build the "knowledge intensive" industries. As part of this effort massive allocations of funds are going toward creating the research base and developing the manufacturing processes of the new high technology industries, the efforts with micro electronics and the push toward the Fifth Generation Computer, for example. It may turn out to be more difficult to achieve objectives in this aspect of industrial development than it was in the more traditional mass production industries. But there is already evidence of significant successes and many American firms fear that Japanese industries will take over additional markets, particularly in the high tech area.

The success of Japanese industrial policies should not be judged only on whether a particular industry has become profitable or competitive, though these considerations are important. It is also a question of whether overall industrial objectives have been achieved; whether the nation's economic structure has been advanced. In the case of Japan, there can be liuttle doubt on this question.

Implications for the United States

Industrial policy is a reflection and an outgrowth of each nation's unique relationship between business and government. Japanese industrial

policy is no exception. The Japanese model is dependent on a relationship of mutual support between business and the relevant government agencies. Japanese policies would not survive wholesale transplantation from Japan to the United States, even if we were willing to accept some of the direct public sector intervention which is practiced in Japan.

A number of aspects of Japanese policy have promise for use in the U.S. The visions of the MITI have been useful to show the direction in which the economy should aim. Such "visions" offer an opportunity in our economy as well. We would not want to establish formal industrial planning. But today we lack perspective on what our future industrial structure is likely to be without policy intervention. Will that industrial structure serve our needs for growth and competitiveness? We require a comprehensive study of the prospects and needs of US industrial structure--we might call it "Perspective on American Industry". Such a perspective would visualize what kind of an economy the United States should aim for in the 1980s and 1990s. It would evaluate which sectors which offer long run comparative advantage for the US economy. This study should be comprehensive and specific, but it should not be simply a "picking the winners" exercise. The study, carried on in a joint private and public framework, should point the directions for priority in broad terms. Should we develop a high level service economy? Should we make use of our comparative advantage in agriculture? Should further develop our leadership in technology? The "Perspective on American Industry". Would probably call for multidimensional priorities which would serve as guidelines for public policy and business investment.

The second major lesson is that directive policies, particularly of the incentive and preferential financing variety, may make contributions toward achieving industrial objectives. It is highly unlikely that we would

successfully develop the close symbiotic relationships which, it is said, exists between business and government in Japan. Administrative guidance would not work in the US. Nor would we want to develop a program of narrowly targeted public sector interventions in the private economy. But much industrial policy calls for tax incentives, preferential financing, research and development contracts, which are entirely feasible within the context of a free enterprise economy, indeed which take advantage of private risk taking and decision making. Tax incentives for investment, and for research and development can be further improved. Funding should be directed not only toward the high tech industries but particularly toward the modernization of traditional industries which would disappear unless new technologies can be introduced. A major effort with industrial infrastructure and with education is also appropriate.

Such a policy may, like in Japan, call for some industrial or sector targeting, but the incentives are best left fairly general allowing scope for private risk taking and decision making. Financing could be provided by an industrial development bank which would take into account the benefits for the society at large, from the development of new technologies and industries. Clearly we must adapt such policies to our institutions and our traditions.

There is also a lesson with respect to trade policy. While Japan has used considerable protectionism to develop its domestic industries to a viable scale, the key to Japanese success has been an export orientation--the creation of industries competitive in the world market. It is important that we follow a similar outward orientation. Occasional trade barriers may be necessary to nurture a domestic industry in difficulty, but widespread protectionism risks creating in the United States industries which are inefficient and non competitive on world markets. Viability in the world

market is a good criterion for judging the economic justification of industries.

A Final Comment

The relationship between Japanese economic development, policy-directed as we have noted, and that of the United States is becoming a matter of growing controversy. What lies in the future for economic relationships between the United States and Japan? What are the implications of current trends for economic development and growth in each country? Can we project a United States focused on agriculture and services and a Japan dominant in the high technology industries? Is this an acceptable prospect? One need not be pessimistic about the flexibility of the United States economy, and I am not, to be concerned about this issue. My colleagues at the University of Pennsylvania and I are beginning a study of the prospects for United States--Japanese economic interactions and appropriate policies. The issue is not simply whether we should counter Japanese industrial policies with policy responses of our own. It should not be a question of economic conflict. It is a question of developing perspectives and policies so that the United States and Japan will achieve their economic objectives in harmony.

Representative LUNGREN. Thank you very much. Our next panelist is Hugh Patrick, professor of Far Eastern economics at Yale University.

Welcome to the panel. Your full statement will be entered into the record, but you may proceed as you wish.

STATEMENT OF HUGH PATRICK, PROFESSOR OF FAR EASTERN ECONOMICS, YALE UNIVERSITY

Mr. PATRICK. Thank you. I apologize for arriving late. The Eastern shuttle took 2 hours today instead of 1.

I welcome this opportunity to participate in these hearings. I think it's an important issue and one that has to be considered carefully. Certainly, interest in industrial policy in the United States has been heightened by perceptions of problems in our own economy and by perceptions of Japan's success, indeed, its challenge to us.

I want to consider three themes in evaluating the Japanese industrial policy and its relevance for American industrial policy. First, it is important to define the nature and scope of the concept of industrial policy since the term is used in so many different ways. Second, I think we need to understand Japanese industrial policy, both its successes and its failures, before we attempt to derive lessons. There are a lot of stereotypes and myths regarding the Japanese economy and Japanese industrial policy and I fear taking lessons too simply.

Finally, I conclude with some general lessons that seem to me derivable from the Japanese experience.

First, on the concept of Japanese industrial policy, it's clear that every nation pursues policies which significantly affect both the aggregate productive capacity of the economy and its particular industrial structure. The term "macroindustrial policy" has been used to describe macropolicies, especially incentives to save, invest, engage in R&D, which increase the long-run productive capacity of the economy, while leaving it to the marketplace to allocate resources among specific industries.

I would include in macroindustrial policies education policy. I think it's noteworthy that Japan has an elementary and secondary school system which produces a substantially higher level of competence in natural sciences, mathematics, and literacy than in the United States, and a college system which turns out more engineers than the United States.

However, industrial policy more typically is defined in micro terms—that is, identification of certain specific industries to receive differentially favorable policy treatment to provide those industries access to resources in degrees or timing different than what would occur through the normal operation of the marketplace.

There are a variety of policy instruments that can be used, but the central point is the differential advantages Government policy provides selected or targeted, if you will, industries, to their benefit and to the relative disadvantage of all other industries.

By this definition, the United States pursues an industrial policy, in the priority it gives to defense and the aerospace industries, for example, and Western European countries do, too, through their employment programs or regional development programs.

Next, I characterize Japanese industrial policy as follows: Its goal has been to enhance economic growth by anticipating in a dynamic way efficient allocation of resources by the criterion of world prices. To this end, it has selected certain key industries as essential for preferential treatment and it has provided such treatment through a comprehensive, coordinated package of policy instruments. And it has conducted industrial policy in a generally conducive and supportive domestic environment.

The goals and instruments and, indeed, the environment, have changed dramatically over the postwar period, reflecting the changing phases of the Japanese economy, from reconstruction, to superfast growth which came to an end in the early 1970's, and to the most recent decade of 4-percent growth.

Well into the 1960's, Japan was a relatively low income and developing country and it pursued a trade and import-substituting industrial policy like many other such countries. As its growth progressed, industrial policy and the intellectual rationalizations of it achieved their heyday.

As you know, GNP in Japan increased six times between 1955 and 1973. This transformed the standard of living and it also transformed the industrial structure and changed substantially the needs and conditions of industrial policy.

As an ideal type, Japanese industrial policy has been pragmatic and economic in its orientation. The basic goal has been to create the productive capacity for rapid growth by accelerating the transfer of resources to the major industries of the future, while smoothing the process of decline of uncompetitive industries, sometimes termed "picking winners and phasing out losers." The emphasis has been on growth and efficient resource allocation.

I would contrast this with the major goal of American industrial policy, which has been to maintain the industrial basis for military strength in terms of quality and quantity, but not of price.

The United States, of course, also helps specific industries such as textiles and automobiles, mainly by restrictions on imports.

The contrast I want to stress is between the policy goals of the U.S. military prowess on the one hand, and Japanese commercial prowess on the other.

Japanese industrial policy has been designed, implemented and justified by the Ministry of International Trade and Industry. MITI officials apparently believe that they can better anticipate the longrun, strategic needs of the economy than the marketplace, which, in their view, inevitably has too short a time horizon and is unwilling to assume enough risk.

A more recent objective of industrial policy is to assist in the structural adjustment process of major uncompetitive declining industries, such as aluminum, petrochemicals, and textiles. Their rationale is that it's more effective to close plants and achieve economies through mergers that are Government encouraged rather than through bankruptcy.

The implementation has several elements. Once an industry is selected, MITI puts together a comprehensive package of support, depreciation allowances, R&D funding, tax benefits, preferential loans and so forth. Second, the policy measures try to anticipate and to use

the marketplace rather than replacing it, by providing various incentives to business to allocate resources.

Third, MITI policy has encouraged the combination of a competitive environment and of effective economies of plant scale in any chosen industry. Indeed, I would argue that this is the real success of industrial policy in the 1950's and 1960's, this creation of a competitive domestic environment.

MITI has not chosen individual firms as national champions. While it will help an industry in trouble, it usually will not help an indidual firm in trouble of its own making.

On the other hand, at the broad sectoral level, the cumulative effect of both industrial policy and macro policy was to provide preferential access to resources to business, especially large firms, and at the expense of housing, consumer credit, social infrastructure. Agriculture, although it's a lagging sector, has also gotten special help.

I compare this with the United States, where resources are preferentially allocated to defense, aerospace, agriculture, and housing.

The policy environment has been favorable in Japan. Let me just briefly suggest some characteristics. A high priority to economic concerns; the muting of competitiveness through societal norms of group cooperation and consensus, so that labor-management and government-business relations are more cooperative and less adversarial than in the United States. These relationships are seen as positive sum, not zero-sum games. A conservative, pro-business, pro-U.S. political party in power and consistently so since 1955. A more congenial antitrust environment.

Over the past decade, industrial policy has changed significantly in Japan. As Japan has become a rich country, growth has slowed down and it has had to develop a more free trade policy and liberalize much of its imports.

I would argue that industrial policy is now less important than earlier. In part, it is because there is greater emphasis on the problems of small business, environmental control, social welfare; and also very much on the macro problems associated with Japan's huge budget deficits.

MITI continues to try to identify and support the industries of the future, especially high-tech industries. Theirs is now a vision of an information society. But most resources, in fact, go to the loser industries, to those in trouble, hit by high energy costs, such as aluminum or petrochemicals; low world demand, such as shipbuilding; or high labor costs, such as textiles. Most government loans go to small business, not large, and subsidy payments go to agriculture, not industry.

The variety and power of policy instruments to implement industrial policy have been reduced sharply. Most importantly, in the present world environment, and given Japan's commitment to the liberal trading system in principle, MITI is no longer able to impose foreign exchange or import restrictions in order to help potential new winner industries.

Nonetheless, MITI does continue to have important policy instruments at its disposal, especially the ability to support R&D in high-tech industries. And in the recently enacted law for structurally de-

pressed industries, it also has powers to encourage mergers and to help a few selected industries in ongoing trouble.

The policy environment, too, has changed. Savings are now in ample supply. The problem is to encourage businessmen to invest rather than rationing credit. Big business also feels strong and doesn't want to be beholden to or dependent upon the government.

The most important policy environment change, perhaps, is that Japan is no longer insulated from the rest of the world. Foreign governmental pressures, especially American, have intruded upon the cozy domestic arrangements that have been so much a part of Japanese industrial policy.

In my judgment, industrial policy has been somewhat beneficial to the Japanese economy, but its role and efficacy has been overrated. MITI has had some notable successes, but it has also had some important failures. And a number of important industries—consumer electronics, autos, virtually all consumer goods, really—have succeeded on their own without differentially favorable government support.

There is no clear consensus among specialists on Japan's political economy regarding the effectiveness of industrial policy. There are two schools of thought which reflect honest differences of opinion among respected scholars. One school sees Japan as embodying a state-guided, capitalist, developmental system in which MITI, through industrial policy, has played a central role. In this view, government leadership has been the key to Japanese economic success, with business a willing follower.

The other school sees the basic source of Japan's economic growth as lying in a vigorous private sector. Business entrepreneurs are the engine of growth. The Government is given credit for having pursued macro and industrial policies beneficial to private sector growth, contributing a favorable economic environment; and also the international economic environment has been favorable.

But the major impetus to growth was from the private market-oriented sector. Industrial policy may have helped the growth process, but it did not play a leading or central role.

Government policies which encourage all industries, as occurred in the 1950's and 1960's, through import protection, in effect, protect none differentially. The main result was to give priority to business over consumers.

In actuality, the differential impact among industries has probably been substantially less than it appears and than we earlier thought. For example, tax concessions, even though they were specific to each industry, were so widespread that their differential impact was relatively modest.

If industrial policy were successful, one might expect an industrial structure to emerge which is quite different from that which would have resulted from market forces. In fact, the Japanese industrial structure is very similar to that of other major nations.

The ultimate test of success is whether industrial policy led to significantly more rapid GNP growth than would have occurred otherwise. There is some evidence that industrial policy anticipated the market, encouraging industries to develop that would have developed

anyway, and if so, then that may have accelerated the growth rate. The problem is that there have not been sufficiently definitive studies to settle this issue.

Today, the goals of industrial policy are more diffuse and less well defined than a decade ago and the ability to implement policy weakened.

With Japan now at the frontiers in many nonmilitary, high tech sectors, it is considerably more difficult for MITI bureaucrats to pick future winners. Nonetheless, we should not underestimate the Government's ability to implement a high technology industrial policy and in ways consonant with GATT rules.

Now that capital and skilled labor are abundant, Government industrial policy will probably place ever greater emphasis on technological innovation by R&D through a variety of incentives and institutional mechanisms.

The Japanese estimate that the U.S. Government spends about 10 times as much for R&D on computers and semiconductors as the Japanese Government does, but that most of it is done by the Department of Defense and NASA.

In contrast, while the Japanese Government R&D investment is far smaller as a percentage of GNP than in the United States, it is predominantly applied and commercially oriented. Moreover, established large Japanese companies benefit from the generally favorable institutional environment, though new small high tech companies suffer from lack of access to capital due to the still embryonic venture capital market.

Easing the structural adjustment of declining industries may become as important a component of Japanese industrial policy as efforts to pick winners. While MITI helped the adjustment process in coal mining and cotton textiles two decades ago, most of its experience in declining industry programs is very recent and they find it is much more difficult to persuade firms to contract than to expand, to scrap equipment, reduce capacity, rationalize, merge, change business, or go out of business.

It is unclear whether declining industry's industrial policy has resulted in a more efficient restructuring of firms and industries or at less social cost then by simply allowing the marketplace to work.

However, viewing the choice as simply that of adjustment via the free market or via MITI is politically naive. These are powerful industries with large debts to powerful banks. It may well be that the Government, for the same domestic political reasons as in the United States and all industrial democracies, has to take some kind of ameliorative action. The MITI programs of structural adjustment of declining industries may not be optimal, but they certainly are preferable to such ad hoc measures as direct Government subsidies or new protectionist barriers against competitive imports.

Finally, let me turn to what I think is relevant from this. Obviously, it is important that we learn from our experience and from that of others as well. Japan has probably been more successful in industrial policy than any other country, but I would argue that is not saying very much.

Thus, my lessons tend to be cautionary. First, I would urge that American policymakers beware of facile generalizations about the

nature and effectiveness of Japanese industrial policy. In my judgment, the industry-specific industrial policy has had a useful, but has not been the central, role in Japan's economic success. It has made less of a policy contribution than macroindustrial policy or aggregate demand policy.

Second, it is even less clear whether Japanese-style industrial policy, in its historical or especially its current manifestation, is appropriate for the United States. In what ways and to what extent can an industrial policy system be incorporated into the ideology of the American economic policy and help achieve its basic goals, and also fit into the existing panoply of policy instruments, institutional arrangements, and governmental administrative structure? I trust these hearings will shed light on these issues.

Third, what I have termed "macroindustrial policy" has made a significant contribution to Japanese growth: General tax incentives for business to invest productively and to engage in R&D and for families to save, and the development of a highly effective public education system.

Fourth, it is easier for a nation to pick potential future winners when it is a follower. The United States is at the technological frontiers. No other countries are ahead of us to emulate. I am skeptical as to whether American Government bureaucrats or scholars or other experts can judge better than the marketplace what the industries of the future should be. As I have just stressed, more general policies such as support of R&D, improvement of educational systems, and general incentives for investment and saving, will probably be more effective in enhancing sustained economic growth than specific government support of specific new industries.

Fifth, perhaps the most important lessons from Japanese industrial policy are how to deal most effectively with important industries in trouble needing structural adjustments. The realities of the political economy of any industrial nation, including the United States and Japan, is that the political and social costs of adjustment are too great to rely solely and simply upon the market mechanism. Our American policy solutions have tended to be ad hoc and import-restrictive. They have not really provided incentives for management and labor to bring about the changes needed in those industries if they are to be efficient, cost and price competitive.

Japanese industrial policy for structurally depressed industries may provide a better second-best solution than the second-best solutions we have been using thus far. This is probably the most fruitful aspect of the Japanese experience in industrial policy that the United States can learn from.

Sixth, recent Japanese and American experience suggests that once a country is at the technological frontier, import restrictions are not an efficient instrument of industrial policy, either for picking winners or for solving the structural problems of industries in trouble. Moreover, protectionism is not an appropriate policy for advanced industrial nations. It is destructive of the international economic system so carefully crafted and nourished ever since 1945.

Seventh, if the United States decides to employ industrial policy to achieve important economic objectives, it can learn from the Japanese methods of implementation. Policies should be long run in focus, con-

sistent in approach, and mobilize a package of mutually supportive policy instruments. The criterion of effectiveness should be economic efficiency as measured by cost and price competitiveness in world markets.

And since the benefits of industrial policy in the first instance accrue to the owners, managers, and workers of those industries targeted for preferential treatment, while the costs are borne by taxpayers and/or consumers, then the beneficiaries should be required to meet performance goals in order to justify the support received.

Finally, you have asked whether the United States needs an industrial development administrative organization comparable to Japan's MITI. The answer depends upon what purposes, functions, and power such an agency would have. I am skeptical that any direct copying of the Japanese model would work in the United States administratively or substantively.

However, the United States does need a locus of activity and authority in the executive branch which would address the issues industrial policy has been dealing with in Japan. We need to analyze and discuss many fundamental issues of our industrial structure and growth. We need a coherent, long run strategy of industrial development. Public policy to implement such a strategy should be promarket, should encourage smooth structural adjustment, not its retardation in troubled industries, should integrate foreign trade and domestic economic policy.

These lessons we can learn from the Japanese experience. The question as to whether we can create an administrative agency capable of dealing with these issues in this manner is unclear. In that judgment, I defer to the knowledge and wisdom of the members of this committee.

Thank you.

[The prepared statement of Mr. Patrick follows:]

PREPARED STATEMENT OF HUGH PATRICK

I. Introduction

The United States is engaging in an important national debate on the goals, nature and effectiveness of governmental economic policy and its appropriate role in our economy and society. A potential, seemingly new, entrant into the panoply of instruments which make up the economic policy system is industrial policy. Interest in industrial policy has been heightened by perceptions of deep-seated difficulties in the American economy not treatable by traditional policy measures, by perceptions of Japanese industrial success and its competitive challenge to certain important American industries, and by perceptions of the success of Japanese industrial policy. I here consider three themes in evaluating Japanese industrial policy and its relevance for American industrial policy.

First, it is important to define the nature and scope of the concept of industrial policy, since the term has been used in so many ways in the contexts of the American economy, the Japanese economy, and indeed other advanced industrial nations and developing nation economies as well.

Second, we need to know and understand well Japanese industrial policy--its successes and its failures--before we attempt to derive possible lessons for United States policy. Simplistic and misleading myths and stereotypes abound regarding the Japanese economy and Japanese industrial policy, and we should beware of what may be incorrect "lessons." All too often perceptions of the Japanese economy are outdated, conditioned excessively by the earlier high growth era--from the mid-1950s to the early 1970s--when Japanese

industrial policy achieved its greatest successes.

Finally, I conclude with some general lessons for possible United States industrial policy that do seem derivable from the Japanese experience.

II. The Concept of Industrial Policy

Every nation pursues policies which significantly affect both the aggregate productive capacity of the economy and its particular industrial structure. Some policies have these goals explicitly, others have indirect and at times unanticipated impacts on the economic structure. Some policies are macro, others micro.

The term macro industrial policy has been used to describe macro policies, especially incentives to save, to invest, and to engage in R and D, which increase the productive capacity of the economy in the longer run while leaving it to the marketplace to allocate resources among specific industries. Such policies—an important element of supply-side economics—have long characterized Japanese economic policy. A broad definition of macro industrial policy would include any macro policies to increase the quantity and especially the quality of the factors of production—labor, capital, and natural resources. This would include educational policy. It is noteworthy that Japan has an elementary and secondary school educational system which produces a substantially higher average level of competence in natural sciences, mathematics, and literacy than in the United States. It also has a college system, predominantly private and of heterogeneous quality, that produces

more engineers and especially electrical engineering college graduates than the United States.

However, industrial policy more typically is defined in micro terms: identification of certain specific industries deemed to be of sufficient national importance as to merit and receive differentially favorable policy treatment in order that those industries have access to resources in degrees and/or timing different than would occur through the normal operations of the marketplace. A range of policy instruments can be used: direct subsidy payments, tax benefits, government-supported financing, protection from imports or promotion of exports, direct government purchases, funding of relevant R&D, special regulatory provisions, and so forth. The central point is the differential advantages government policy provides selected, targeted if you will, industries—to their benefit and to the relative disadvantage of all other industries. Those propounding industrial policy as so defined must feel the marketplace is not operating optimally due to market imperfections or outright market failure, so that specific government intervention is warranted.

Even this definition of industrial policy, without reference to its basic objectives, to the policy environment, and to the utilization of specific policy instruments, is quite general. By this definition the United States pursues an industrial policy in the priority it gives to defense and aero-space industries, for example; and the continental Western European nations do through regional development programs which in practice are keyed to certain basic industries such as steel. The concept of industrial policy can be further refined through examination of the Japanese case.

III. Japanese Industrial Policy in Context

Japanese industrial policy can be characterized as follows: its goal has been to enhance economic growth by anticipating dynamically efficient allocation of resources by the criterion of world not just domestic prices; to this end it has selected certain key industries as essential for preferential treatment; and it has provided such treatment through a comprehensive, coordinated package of policy instruments. And it has conducted industrial policy in a generally conducive and supportive domestic policy environment.

It is important to understand that the goals, policy instruments, and policy environment have changed dramatically over the postwar period, and just what those changes have been. The postwar Japanese economy has gone through three phases: a decade of postwar reconstruction following the devastation of World War II; almost two decades, from the mid-1950s to 1973, of superfast GNP growth (about 10 percent annual average); and the most recent decade of 4 percent growth in a domestic and world environment of oil crises and stagflation. Industrial policy has envolved from one period to the next.

Well into the second phase Japan was a low-income, developing country, and pursued trade and industrial policies like many other such countries. Industrial policy played an important role from the beginning, initially with a strong domestic market orientation; reconstruction required special government help for the fertilizer, electric power, coal, steel, and transport industries. As the Japanese high-growth era progressed industrial policy, and the

intellectual rationalizations of it, achieved their heyday. New industries—chemicals, petrochemicals, and other intermediate goods industries—were added to the list for preferential support. Between 1955 and 1973 the Japanese GNP increased almost six times in real terms. By the early 1970s Japan had become the world's third largest industrial economy (following the United States and the USSR), with per capita incomes comparable to Western Europe. This profound surge of growth transformed the industrial structure and changed substantially the needs and conditions of industrial policy.

Japanese industrial policy as an ideal-type came into its own in the high-growth era. It is useful to characterize it first in these ideal-type terms, then to indicate the changes that have taken place in industrial policy in the past decade, and finally to provide an evaluation of Japanese industrial policy in both its historical and present contexts.

Japanese Industrial Policy As An Ideal-Type

Japanese industrial policy has been pragmatic and economic in its orientation. The basic goal has been to create the productive capacity for rapid growth by accelerating the transfer of resources to the major industries of the future, while smoothing the process of decline of uncompetitive industries, sometimes termed "picking winners and phasing out losers." In principle "winners" should meet the following criteria: industries of significant size in which Japan would have future comparative advantage as the relative

supplies and costs of its factors of production changed with domestic growth and evolving international economic conditions, and as learning curve economies were achieved (infant industry cases); industries for which domestic and world demand would be highly income elastic; and industries in which Japan would become internationally price competitive.

The emphasis of Japanese industrial policy has been on economic growth and economically efficient resource allocation. Economic efficiency has come to be defined in terms of world markets, not (protected) domestic markets, and in terms of competitive prices, high quality, and other non-price attributes. In contrast the major goal of American industrial policy has been to maintain the industrial basis for military strength, in terms of quality and quantity but not of price. The United States has also pursued policies to help specific industries, such as textiles and automobiles, mainly by restrictions on imports. The contrast in policy goals between American military prowess (and the development of comparative advantage and export sales in military hardware) and Japanese economic/commercial strength stands out. As already noted, Western European nations aid various industries but with such pronounced regional development objectives that they seldom use the term industrial policy. The major exception is France today with its nationalization and high tech policies. While there may be a major distinction in principle between the Japanese emphasis on efficient resource allocation and American and Western European emphasis on the more equitable distribution of income, the political economies in practice are not so different; Japanese policymakers

have continuously provided support for inefficient but politically powerful farmers and small business on more equal income distribution grounds.

Japanese industrial policy has been designed, implemented, and justified by the Ministry of International Trade and Industry (MITI). MITI has been quick to argue market failure, so-called excessive competition, and hence need for government intervention. Its rationale for industrial policy has included the following themes. The private market mechanism inadequately allocates resources for long-run growth; MITI officials emphasize instances of market failure (external economies or diseconomies, public good effects, private underinvestment in R and D) and Japanese labor and capital market imperfections. One senior MITI official has argued that Japanese are so locked into their own company (group) and so competitive vis a vis others that they go beyond the bounds of normal economic behavior and engage in excessive competition--with each other as much as with foreigners.

MITI officials apparently believe they can better anticipate the long-run strategic needs of the economy than the marketplace, which inevitably has too short a time horizon and is unwilling to assume enough risk or quickly enough. They believe they can anticipate where the market will go, thereby speeding up its operation. While not so clearly stated, underlying their definition of future key industries is a strategic sense as to what industrial structure will be required for Japan to be a major economic power ten, twenty years from now; these include semiconductors, computers, telecommunications, nuclear energy. A more recent objective of Japanese industrial

policy is to assist in the structural adjustment process of major uncompetitive, declining industries such as aluminum, petrochemicals, and textiles. The MITI rationale is pragmatic: in scaling down an industry it is more efficient to close plants and achieve economies through (government-encouraged) merger than bankruptcy.

The Japanese implementation of industrial policy has several important elements. First, once an industry has been selected for support MITI has put together (in negotiations with the Ministry of Finance) a comprehensive package of support: accelerated depreciation allowances, special R&D funding (often through the industry association) or tax benefits, loans through the Japan Development Bank or other government financial institutions, and so forth. Second, the policy measures try to anticipate and to use the marketplace rather than replacing it, by providing various incentives to business to allocate resources as desired. Such a policy package based on market incentives to encourage business behavior in desired directions contrasts with the more piecemeal American approach of reliance on a single instrument in aiding specific industries without building in incentives to alter business behavior, as exemplified by de facto restrictions on imports of textiles or automobiles.

Third, MITI policy has encouraged the combination of a competitive environment and of effective economies of plant scale in any chosen industry. Indeed, this was the real success of Japanese industrial policy in the high growth era of the 1950s and 1960s: rapid, efficient industrialization by enabling sufficient new firms to enter major industries that firms were forced to compete with each other,

with the realization that import barriers would ultimately be reduced so that firms would face world, not just domestic, competition. Thus Japan, more rapidly than other nations industrializing behind import barriers, was able to achieve international competitiveness in a number of new important industries, ranging from consumer electronics to steel to small cars to certain types of semiconductors and computers.

Just how micro has Japanese industrial policy been? Let us consider three levels: an individual large firm; an industry, narrowly or more broadly defined; and a productive sector, such as manufacturing, construction, agriculture, or services. Japanese industrial policy has been at the industry level, usually rather broadly defined. MITI has not chosen individual firms as national champions; it has not particularly favored one large firm over another; while it will help an industry in trouble, it usually will not help an individual firm in trouble of its own making. On the other hand, at the broad sectoral level the cumulative effect of both industrial policy and macro policy was to provide preferential access to resources to business, especially large firms, at the expense of housing, consumer credit, or social infrastructure. Agriculture, a lagging not a leading growth sector, also received special help. In the United States, on the other hand, resources were preferentially allocated to defense, aerospace, agriculture, and housing. And within industry it may well be that the macro system of tax and other incentives differentially affected specific industries in the United States even more than Japan; certainly the taxation of corporate profits varies widely by industry

in the United States.

The Japanese domestic policy environment has been quite favorable for industrial policy and for economic policy generally. High priority is given in Japanese government policymaking to economic issues, domestic and international. The earlier predominant focus on economic growth and efficiency has evolved into a broader mix of goals, including price stability and social welfare (mainly transfer payments for health and old age). The emphasis has been on private enterprise and the operation (and influencing) of the market mechanism, with the first claim on scarce resources going to business not government.

Japanese are very competitive, and there are many areas and problems of conflict in Japan as in other societies. Japanese society is built upon individual participation in groups—the family, the school class, the work place—and societal norms stress the importance of harmony through cooperation and at least formal consensus. This mutes and makes more subtle the normal conflicts of interest and adversarial relationships of life. Accordingly labor-management relations and government-business relations are much more cooperative and mutually beneficial than in the adversarial, suspicious, more individualistic American society and its institutions; in Japan these relationships are seen as positive-sum, not zero-sum, games. And business in Japan has benefitted substantially from the continuance in power of the pro-business, conservative Liberal-Democratic Party ever since 1955. It has also benefitted from an easier anti-trust environment within which, with MITI approval,

targeted industries could form temporary anti-recession cartels and high tech firms could participate in joint R and D projects.

Changes in Japanese Industrial Policy in the Past Decade

Over the past decade Japanese industrial policy has changed significantly as Japan has achieved affluence ("caught up with the West"), business has become strong and independent, growth has slowed greatly, the price of energy has risen dramatically, and Japan has adopted a free trade policy and greatly liberalized most of its imports. These have effected substantially the goals, policy instruments, and policy environment for industrial policy.

Industrial policy is now less important in Japan than earlier. The goals of economic policy have widened, with greater emphasis on small business, environmental control, and social welfare. The focus of government attention is upon the macro problems associated with huge budget deficits, and upon "administrative reform" (read reducing budget subsidies to agriculture and the Japan National Railways in particular).

MITI still tries to identify and support the industries of the future, especially high tech industries; theirs in now a vision of an information society. But governmental resources in fact now go more to the losers, those in difficulty, than to the potential winners--to the structurally depressed industries hit by high energy costs (aluminum, petrochemicals, etc.), low world demand (shipbuilding), or high labor costs (textiles, simple assembly operations). Most government loans go to small businesses, not large. And almost all

government subsidy payments go to agriculture, not industry.

The variety and power of policy instruments to implement industrial policy have been reduced sharply. Most importantly, in the present world environment and given Japan's commitment to the liberal trading system in principle, MITI is no longer able to impose foreign exchange or import restrictions—tariffs, quotas, non-tariff barriers — in order to help new potential "winner industries. The licensing of foreign technology imports came to an end in 1968. Anti-recession cartels are no longer as effective since imports cannot be restricted. Direct subsidy payments have never been very important in industrial policy; given the budgetary crisis they are unlikely to be important in the future. Special tax benefits are increasingly resisted by the Ministry of Finance, obsessed by the budget deficits. The differential between commercial banks and government lending interest rates has become so narrow for large firms that government loans have far smaller benefit than earlier. Nonetheless, MITI continues to have important policy instruments at its disposal, particularly its ability to subsidize and encourage commercially-oriented R & D in high tech industries. And in the recently enacted law for structurally depressed industries, MITI obtained powers to encourage mergers and otherwise help a few major selected industries in ongoing trouble because of loss of international competitiveness.

The policy environment for industrial policy has changed a great deal from the earlier, high-growth era. As already noted, there is no longer the overwhelming focus on pell-mell growth; other

objectives have become more important. Business is correctly perceived as able to grow on its own, especially given the moderate GNP growth rate projections of 4-5 percent. Unlikely earlier, savings are in ample supply; the problem now is to encourage businessmen to invest rather than rationing credit to them. Big business now is and feels strong and independent; it does not want to be beholden to or dependant upon MITI or other government officials.

One of the most important changes in the policy environment is that Japan is no longer insulated from the rest of the world. Foreign governmental pressures--especially American--have intruded upon the cozy domestic arrangements that have been so much a part of Japanese industrial policy. Japan is now a major economy and world trader and indeed the challenger of American and European industrial might, in steel, cars and now increasingly in semiconductors, computers, telecommunications and other high tech areas. Its actions, policy and otherwise, inevitably invite scrutiny and at times reactions by the United States and others. Japan has truly become an interdependent member of an interdependent world. As one of the three pillars of the liberal international economic order--together with the United States and the Western European industrial democracies--Japan can no longer use trade policy as an instrument of industrial policy; it must reduce trade barriers, not raise them.

Evaluation of Japanese Industrial Policy

In my judgment industrial policy has been somewhat beneficial for the Japanese economy but its role and efficacy has been overrated

by many. Japan has pursued a relatively coherent industrial policy, though its impact has perhaps been less than meets the eye. MITI has supported a number of specific industries and has had some notable successes. It has some important failures—even aside from the promotion of petroleum and energy intensive industries in the 1960s which were made uncompetitive by the sharp rises in energy prices in the 1970s. And there are a number of industries, such as consumer electronics, automobiles, and indeed virtually all consumer goods, in which the government did not take any specially supportive role but which have succeeded on their own.

It should be recognized that there is no clear consensus among specialists on Japan's political economy regarding the effectiveness of Japanese industrial policy. There are two schools of thought, reflecting honest differences of opinion among respected scholars. Let me describe the schools in perhaps stereotypic form in order to differentiate them; most specialists would place themselves somewhere between these two extremes. One school sees Japan as embodying a state-guided capitalist developmental system in which MITI and industrial policy have played a central role. In this view government leadership has been the key to Japan's economic success, with business a willing follower. An extreme version of this approach is encapsulated in the phrase "Japan Inc.," though most agree that is too simplistic and naive a concept for what is a more complex, multi-dimensional set of relationships among the triad of Liberal-Democratic Party politicians, central government

bureaucrats, and big business leaders. Essentially the responsibility for determining the goals of economic policy and seeing to it they are achieved is attributed to the bureaucracy. To paraphrase Professor Chalmers Johnson of the University of California at Berkeley: politicians reign, bureaucrats rule.

The other school sees the basic source of Japan's economic growth as lying in a vigorous private sector which, taking advantage of the private market mechanism, energetically, imaginatively and diligently engaged in business productive investment and commercially-oriented research and development and in the saving to finance those activities. Business entrepreneurs were the engine of growth. At the same time, the government is given credit for having pursued macro and industrial policies beneficial to private sector growth. The government helped contribute to a favorable economic environment, as did the postwar international economic system--but the major impetus to growth was from the private, market-oriented sector. Industrial policy may well have helped the growth process, but it did not play a leading or central role.

The Japanese central government bureaucracy is certainly able and powerful; however, it is by no means monolithic. Indeed, Japanese Ministries are more entrenched and autonomous than their counterparts in the United States Executive Branch. Each Ministry has its own, at times self-serving, definition of the national interest. Thus the Ministry of Finance, and certainly the Ministry of Agriculture, Forestry and Fisheries, perceive the national

interest quite differently than MITI. MITI and the Fair Trade Commission take different positions on anti-trust and industrial policy. Moreover jurisdictional disputes and turf problems are as abundant in Japan as in other national bureaucracies. While MITI has jurisdiction regarding the domestic activities and foreign trade of most industries, other Ministries have responsibility for certain important sectors: Ministry of Finance for all the financial institutions, Health and Welfare for medical equipment and pharmaceuticals, Agriculture for food processing, Transport for civil air transport, shipping, trucking and taxis, for example. Thus, MITI's industrial policy does not and cannot cover all industrial activities.

It is important to recognize that government policies which encourage all industries, as occurred in the 1950s and 1960s through import protection, in effect protect none differentially. The main result is to give priority to business over households. The essence of industrial policy is that it differentiates among industries by providing only certain industries specially large incentives. Recent research by Professor Gary Saxonhouse of the University of Michigan indicates that the differential impact among industries has probably been substantially less than we had earlier believed. This supports an earlier study by Dr. Joseph Pechman of the Brookings Institution and Professor Keimei Kaizuka of Tokyo Univeristy on specific tax concessions granted to specific industries; they made the point that such concessions were so widespread, despite being specific to each industry, that their differential impact was

relatively modest. Japanese industrial policy may have started on a micro basis with specific priorities, and some certainly persisted; but the bandwagon effect became so widespread, especially in trade protection but also in tax concessions, that its effect may have been akin to a macro industrial policy of helping virtually all industry.

If industrial policy is successful one might expect an industrial structure to emerge quite different from that which would result from the operation of purely market forces. Yet that has not been the case. Research conducted by Professor Saxonhouse and myself indicates that the Japanese industrial structure is very similar to that of other industrial nations when adjustments are made for market size, per capita income level, natural resource endowment, and distance from markets. This is not to say that past Japanese industrial policy has not had substantial effects. However, it does suggest that the picture is more complex and less well understood than some would suggest.

The ultimate test of the success of Japanese industrial policy is whether it led to a significantly more rapid GNP growth rate than would have occurred otherwise. This is at the core of the scholarly debate. Japanese industrial policy seems to have anticipated where the market would have taken the industrial structure anyway: that is to say, MITI encouraged certain industries which were among the growth industries of the future to develop sooner than they might have otherwise. If so, the industrial policy may have had some success in accelerating the growth rate. The problem is

that we do not yet have detailed, definitive studies which settle for once and all the issue of the degree and nature of the effectiveness of Japanese industrial policy.

Today, the goals of Japanese industrial policy are more diffuse and less well-defined than a decade or two ago, and the ability to implement policy weakened. With Japan now at the frontiers in many non-military high technology sectors, it is considerably more difficult for MITI bureaucrats to pick future "winners." There is no longer the American model of evolving industrial structure to emulate since Japan by and large has caught up to it.

Nonetheless, we should not underestimate the Japanese government's ability to implement a high technolgoy industrial policy, and in ways consonant with GATT rules. (It is of course important that Japan not impose import barriers on high technology products, and that it adhere to the "equal national treatment" rule for American high tech firms operating in Japan.) Now that capital and skilled labor are abundant, government industrial policy will probably place ever greater emphasis on technological innovation by research and development through a variety of incentives and institutional mechanisms. Japanese sources have estimated that the American government spends on the order of ten times as much for R & D in computers and semiconductors as the Japanese government; but most is by the Department of Defense and NASA for military and aerospace programs. In contrast, Japanese government R & D, while far smaller absolutely and as a percentage of GNP than in the United States, is

predominantly applied and commercially-oriented. Moreover, established large Japanese companies benefit from the favorable institutional environment, with the opportunity to cooperate in R & D activities and to work closely with NTT, the government-owned telecommunications monopoly. On the other hand, new, small high tech firms suffer from the lack of access to capital due to the still-embryonic venture capital market.

It is quite possible that easing the structural adjustment of declining industries may become as important a component of Japanese industrial policy as efforts to pick winners. As Japan's comparative advantage continues to evolve--due to the continuing spread of the industrial revolution to the developing nations, to Japan's own future growth, and to changing world relative prices of energy and other commodities and products--structural adjustment problems will become more severe in Japan as in all advanced industrial nations. While MITI helped the adjustment process in coal mining and cotton textiles in the late 1950s and early 1960, most of its experience in declining industry programs is very recent, indeed underway at present. It is more difficult to persuade firms to contract than to expand--to scrap equipment, reduce capacity, rationalize, merge, change business or go out of business. The policy mix is likely to be different too: more direct subsidies, greater reliance on low interest rate loans, virtually forced merger of firms. The record of industrial policy to date in helping declining industries is mixed. The recent policy package for shipbuilding was apparantly

effective; capacity was reduced by one-third without major bankruptcies. However, capacity adjustment and reorganization has been slower in aluminum, electric furnace steel and other depressed industries.

It is unclear whether declining industry industrial policy has resulted in a more efficient restructuring of firms and industries, or at less social cost, than simply allowing the marketplace to work. Indeed it is unclear whether MITI policy has anticipated, or simply followed, the adjustment process forced by market conditions. However, viewing the choice as simply that of adjustment via the free market or via MITI is politically naive. These are powerful industries, with large debts to powerful banks. It may well be that the government, for the same domestic political reasons as in the United States and all industrial democracies, has to take some kind of ameliorative action. The MITI programs of structural adjustment of declining industries may not be optimal, but they certainly are preferable to such ad hoc measures as direct government subsidies or new protectionist barriers against competitive imports.

IV. The Relevance of the Japanese Experience for United States Industrial Policy

It is important to learn from experience, our own and that of others. Japan is probably the most successful case of industrial policy in recent world economic history. Nonetheless, my "lessons" are mainly cautionary; there are no simple answers or solutions.

First, American policymakers should beware of facile generalizations about the nature and effectiveness of Japanese industrial policy. It is premature to present the case to the jury; the evidence is still far from complete and real consensus has yet to emerge from the specialists. There were many factors at play bringing about Japan's two decades of superfast growth up to 1973, and still good economic performance of the past decade relative to the United States and Western Europe. In my judgment industry-specific industrial policy has had a useful but not the central role in Japan's economic success; it has made less of a policy contribution than macro industrial policy or aggregate demand policy.

Second, it is even less clear whether Japanese-style industrial policy in its historical or especially in its current manifestations is appropriate for the United States. In what ways and to what extent can an industrial policy system be incorporated into the ideology of American economic policy and help achieve its basic goals, and fit into the existing panoply of policy instruments, institutional arrangements, and governmental administrative structure? Presumably these Hearings will shed light on these issues.

Third, what I have termed macro industrial policy has made a significant contribution to Japanese growth: general tax incentives to business to invest productively and to engage in R and D, and to families to save; and the development of a highly effective public education system. Macro industrial policy, like industry-specific, can and should rely upon the marketplace while using it. Thus, the

risks, costs, and inability to appropriate fully its benefits mean government funding of R and D is desirable, in both Japan and the United States. Much of the historic reason for Japanese industrial policy has been the shortage of capital and an inadequate financial institution framework for allocating capital well. The United States has very well developed financial markets, so has less need of industrial policy. On the other hand, in certain respects, Japanese labor markets and institutions work better than their American counterparts. Certainly any American industrial policy should take into account manpower needs and conditions.

Fourth, it is easier for a nation to pick potential future winner industries when it is in a follower position. It can study the industrial structure of more advanced nations to learn its potential future competitiveness. However, the United States is at the technological frontiers; no other countries are ahead of us to emulate. I am skeptical as to whether American government bureaucrats, scholars, or other experts can judge better than the marketplace what the industries of the future should be. As just stressed, more general policies—support of basic R and D, improvement of the educational system, general incentives for investment and saving—will probably be more effective in enhancing sustained economic growth than special governmental support of specific new industries.

Fifth, perhaps the most important lessons from Japanese industrial policy are how to deal most effectively with important industries in trouble, needing structural adjustments. The realities of the

political economy of any industrial nation, including the United States and Japan, is that the political and social costs of adjustment are too great to rely solely and simply upon the market mechanism. Whether consumers and taxpayers like it or not, something is likely to be done to help American textiles or steel or automobiles. Our policy solutions have tended to be ad hoc, and import restrictive. They have not really provided incentives for management and labor to bring about the changes needed in those industries if they are to be efficient, cost and price competitive. Japanese industrial policy for structurally depressed industries may provide a better second-best solution than the second-best solutions we have been using thus far. This probably is the most fruitful aspect of the Japanese experience in industrial policy the United States can learn from.

Sixth, recent Japanese and American experience suggest that once a country is at the technological frontiers, import restrictions may not be an efficient instrument of industrial policy either for picking winners or for solving the structural problems of industries in trouble. Moreover, protectionism is not an appropriate policy for advanced industrial nations; it is destructive of the international economic system so carefully crafted and nourished ever since 1945. As a less-developed follower nation, Japan in the 1950s and early 1960s by general restrictions of industrial imports achieved broad-based industrialization and rapid growth; perhaps the greatest success of industrial policy was the maintenance and encouragement

of vigorously competitive domestic markets which forced firms to become efficient while growing in size. Though in a narrow sense the implementation of industrial policy has been weakened by Japan's import liberalization of the past decade, the industrial sector as a whole was sufficiently developed that it benefitted from increased foreign competition in Japanese markets. Resources are being allocated more efficiently in a decade of major structural change in industry.

Seventh, if the United States decides to employ industrial policy to achieve important economic objectives, it can learn from the Japanese methods of implementation. Policy should be long-run in focus, consistent in approach, and mobilize a package of mutually supportive policy instruments. The criterion of effectiveness should be economic efficiency, as measured by cost and price competitiveness in world, not just United States, markets. And, since the benefits of industrial policy in the first instance accrue to the owners, managers, and workers of those industries targeted for preferential treatment while the costs are born by taxpayers and/or consumers, then the beneficiaries should be required to meet performance goals in order to justify the support received.

Finally, you have asked whether the United States needs an industrial development administrative organization comparable to Japan's Ministry of International Trade and Industry. The answer depends upon what purposes, functions, and powers such an agency would have. I am skeptical that any direct copying of the Japanese model would work in the United States, administratively or substantively

However, it seems to me the United States does need a locus of activity and authority in the Executive Branch which would address the issues industrial policy has been dealing with in Japan. We need to analyze and discuss many fundamental issues of our industrial structure and growth. We need a coherent long-run strategy of industrial development. Public policy to implement such a strategy should be pro-market, should encourage smooth structural adjustment not its retardation in troubled industries, should integrate foreign trade and domestic economic policy. These lessons we can learn from the Japanese experience. The question is whether we can create an administrative agency capable of dealing with these issues in this manner. In that judgment I defer to the knowledge and wisdom of the members of this Committee.

Representative LUNGREN. Thank you very much, Professor Patrick. Next on our panel is H. William Tanaka, senior member of the firm of Tanaka, Walders & Ritger.

Mr. Tanaka, as I mentioned to the others, your full text will be placed in the record and you may proceed as you wish.

STATEMENT OF H. WILLIAM TANAKA, SENIOR MEMBER, TANAKA, WALDERS & RITGER

Mr. TANAKA. Thank you. With the Chair's permission, and in order to save time, I would like to read excerpts from my prepared statement and stay within the time limits imposed.

For the record, my name is H. William Tanaka, senior member of the law firm of Tanaka, Walders & Ritger. I appreciate the opportunity to appear before you to present testimony on industrial policy. You'll note that I have put industrial policy in quotes and I use, throughout the testimony, the term "industrial policy" advisedly for reasons which I will explain at the end of my oral testimony.

I emphasize at the outset that Japanese industrial policy is set in a context rather different from the American context. In Japan, industrial policy is not only government policy toward business aimed at influencing both behavior and results, but also the positive response of business enterprise to those policies. Of the two, the latter is more important, in my view.

According to the experienced Japan hand, Eleanor Hadley, and I quote: "At no point has Japan sought to plan the whole of its industrial sector. Further, reliance has been placed on the private sector to carry out those public policy decisions. Cooperation has been by inducement, not compulsion."

The debate over whether the Japanese Government or the private sector is the most important, most dominant force, misses the point. The exercise involves a sharing of power between public and private sectors. Without full private sector initiative, and willing support, a government industrial policy would not work.

In other words, it is fundamentally an attitude of cooperation to meet common goals that drives the process. The bottom line is that they work together, each with a different role, to produce results. And the result has been high quality, upgraded design, and cost-effective pricing.

And here, again, due largely, in my view, to private initiative driven by intense competition, and not by industry-specific government policies.

The most important input by the Government has been the creation of desirable macroeconomic policies which have created a favorable economic climate within which to encourage growth of the desired industries. Any perception which ignores the cost-efficient and quality-driven organizational dynamics of the Japanese industrial base misunderstands the inner action between public and private sectors in Japan. The notion that Japan achieved a trade surplus exceeding $70 billion, substantial profits, and steadily rising levels of real income and living standards over more than 25 years by exploiting Japanese consumers in a highly protected home market while flooding the world

market with quality goods at below-cost dumping propelled by large subsidies is, in my view, an exercise in self-deception of the most insidious sort.

We must face up to our problems instead of externalizing and segregating them.

Congress, I respectfully submit, should not become embroiled in the rhetoric and semantic swirls of an esoteric industrial policy. Broad concepts of industry policy applied by incantation from above miss the competitive interactions in the trenches. These competitive engagements in the domestic and international markets relate to product design and quality, delivery terms, and service. And here, again, the problem basically is bad or good management. The problem basically is, therefore, attitudes, quality of relationship between management and labor.

These are the things that, in their aggregate, result in the production of shoddy products or the production of quality products at cost-efficient prices.

Defining the proper role of the U.S. Government is a difficult task. I think, in general, that Government should adhere to free enterprise approaches, for example, by encouraging the wealth creation process. This could occur in many ways, such as tax reduction incentives, capital gains or R&D tax credits, or by the Government acting in the role of an intelligent investor.

I will discuss this concept in a moment.

Congressman Ed Zschau has been quoted as saying, "Target the entrepreneurial process; not the industry." Now what he has been talking about was the venture capital process and the importance of incentives to save and invest and the ability of individuals to reap the rewards of intelligent risk-taking. Let me illustrate.

According to a recent GAO study, $1.4 billion was invested in 1,332 venture-backed firms in 1970 to 1979. This will generate by 1989 annual sales of $88 billion, corporate taxes of $1.7 billion, and nearly 2 million jobs in that year alone. Examples of large and small businesses benefiting from venture capital abound.

Intel was begun by venturists. And recently, with General Electric, through acquisition of Intersil and United Technologies, through acquisition of Mostek, benefited directly from technical innovations developed by venture capital-backed firms.

In a sense, the venture capital industry is America's private sector technological targeting process. A proper U.S. industrial policy, then, would encourage the venture industry by further reducing the capital gains tax. Instead of the political conceptual approach, I suggest that we in the United States focus on technological solutions to technological problems. Major problems are with product quality, delivery time, and terms—as such, these problems have little to do with Government policy. Much of the problem is attitudinal from Government/business to management/labor, stemming in part from the adversarial mindset.

In a sense, industrial policy as implemented in Japan is nothing more than a coordinated and mutually reinforcing effort which nudges and guides the underlying technology driven economic process of disinvestment out of sunset industries and investment in the sunrise industries. The economist Schumpeter has described this weeding out of

sunset industries and emergence of sunrise industries as a continuing process of creative destruction.

In any event, the recent spate of protectionism throughout the world constraining Japan will, in my view, stimulate Japanese business toward achieving greater cost efficiencies and generating more new products through increased basic and development R&D effort.

As for the United States and other industrialized economies, whether or not these economies will benefit from a temporary constraint on imports, whether in the sunset or sunrise products, will depend in part upon the collective response of the involved companies and their workers. If the respite gained is not used in achieving cost efficiencies, upgrading quality, and promoting longer term R&D, the result, most assuredly, will be further diminution of competitiveness when the restraints are removed.

Cooperative arrangements need to be sought to create partnerships between United States and Japanese producers in areas of NC-machinery, robotics and flexible manufacturing systems, and other new technological areas to restore competitiveness and speed renewal of the primary industrial base.

It is at the micro level, the level of the firm in an industry, that innovations—mangerial, technological—need to be made. These innovations will occur if the entrepreneurial risks are undertaken and backed by sufficient capital.

Let me cite numerous examples of United States and Japanese working together to upgrade the industrial base in the United States. And below, at random, I have quickly scanned the Kyodo News Service reports, picking out those articles which relate to linkages between the U.S. manufacturers and Japanese manufacturers involving largely a thrust, inward flow, of manufacturing technology into the United States.

So, clearly, when one looks at the developments in the industry, we see increasing levels of linkages, both technological and commercial, distributional between Japanese companies and U.S companies which, in my view, signify an increased technology transfer inflow into the United States and thereby contributing to the upgrading of production facilities and production technologies, particularly of the U.S. primary industrial base.

Finally, with respect to the use of the term "industrial policy" and "industrial targeting," in my view, this term, by definition, misperceives the problem which is involved. We live in basically a technology-driven society. Industrial boundaries are being destroyed, changed, shifted everyday as a result of technology, as a result of innovation.

For example, we had at one time the office equipment manufacturing industry, so to speak, which produced electro-mechanical adding machines and machines which performed other simple mathematic functions.

This industry was blindsided by exogenous technology which came from outside of the industry; namely, the electronics industry, the industry which manufactures TV sets, et cetera, came out with the hand-held, battery-driven calculators. Now this calculator, obviously, completely destroyed adding machines and calculator lines of Royal, Marchant, and all these companies which were manufacturing basic-

ally information-processing machines which were from a technology standpoint, electromechanically operated.

These were completely displaced by a machine, a more convenient machine, a calculator which can be held in the hand, which is cost efficient, energy efficient, and which was developed by the consumer electronic product manufacturing industry.

So the term "industry," as used in industrial policy, does not focus on the process that we ought to be focusing on. We have an adversarial mindset. We have a legal mindset. We tend to think in terms of industries, of protecting industrial architecture, of protecting established industries. This approach, I think, is the approach that has been structured into the criteria and the escape clause provisions, the dumping provisions and so on.

I think that the focus ought to be the technological process and the technology-driven society. I would favor the use of the term "technology policy" rather than "industrial policy" or "industrial targeting."

Thank you.

[The prepared statement of Mr. Tanaka, together with appendixes, follows:]

PREPARED STATEMENT OF H. WILLIAM TANAKA

Mr. Chairman and Members of the Committee, I appreciate the opportunity to appear before you to present testimony on "industrial policy" as practiced in Japan.

I emphasize at the outset that Japanese industrial policy is set in a context rather different from the American. In Japan, industrial policy is not only government policy towards business aimed at influencing both behavior and results, but also the positive response of business enterprise to those policies. According to the experienced Japan-hand Eleanor Hadley:

> "...at no point has Japan sought to plan the whole of its industrial sector. Further, reliance has been placed on the private sector to carry out those public policy decisions...cooperation has been by inducement, not compulsion."[1]

The debate over whether the Japanese government or the Japanese private sector is the most important, most dominant force misses the point. The exercise involves a sharing of power

[1]See Appendix A, "The Secret of Japan's Success"

between public and private sectors. Without full private sector initiative and willing support, a government industrial policy would not work. In other words, it is fundamentally an attitude of cooperation to meet common goals that drives the process. The bottom line is that they work together, each with a different role, to produce results. And the result has been high quality, upgraded design, and cost effective pricing.

Any perception which ignores the cost-efficient and quality-driven organizational dynamics of the Japanese industrial base misunderstands the interaction between public and private sectors in Japan. The notion that Japan achieved a trade surplus exceeding $70 billion, substantial profits, and steadily rising levels of real income and living standards over more than 25 years by exploiting Japanese consumers in a highly protected home market, while flooding world markets with quality goods at below-cost dumping propelled by large subsidies, is, in my view, an exercise in self deception of the most insidious sort. We must face up to our problems instead of externalizing and subrogating them.

Congress, I respectfully submit, should not become embroiled in the rhetoric and semantic swirls of an esoteric "industrial policy". Broad concepts of industry policy applied by incantation from above miss the competitive interactions in the trenches. These competitive engagements in the domestic and international markets relate to product design and quality, delivery terms and service.

Defining the proper role of the U.S. government is a difficult task. I think, in general, that the government should adhere to "free enterprise" approaches, for example, by encouraging the wealth creation process. This could occur in many ways, such as through tax reduction incentives -- capital gains, or R&D tax credits -- or by the government acting in the role of an "intelligent investor". I will discuss this latter concept in a moment.

Congressman Ed Zschau has been quoted as saying: "Target the entrepreneurial process, not the industry?" Now, what he has been talking about was the venture capital process and the importance of incentives to save and invest, and the ability of individuals to reap the rewards of intelligent risk taking. Let me illustrate. According to a recent GAO study, the $1.4 billion was invested in 1332 venture-backed firms from 1970 to 1979. This will generate by 1989 annual sales of $88 billion, corporate taxes of $1.7 billion and nearly 2 million jobs -- in that year alone.[2] Examples of large and small businesses benefitting from venture capital abound: Intel was begun by venturists, and recently with General Electric through acquisition of Intersil and United Technologies through acquisition of Mostek, benefitted directly from technical innovations developed by venture capital backed firms. In a sense, the venture capital industry is America's private sector "technological targeting" process! A

[2]GAO "Government Industry Cooperation Can Enhance the Venture Capital Process", August 1982.

proper U.S. "industrial policy" then would encourage the venture industry by further reducing the capital gains tax.

Instead of political-conceptual approach, I suggest that we in the United States focus on technological solutions to technological problems. Major problems are with product quality, delivery time and terms - as such these problems have little to do with government policy. Much of the problem is attitudinal, from government/business to management/labor, stemming in part from the adversarial mindset.

Recently, some U.S. business has been calling for increased government-funding of research and development to underwrite a greater share of the investment risk. In this connection, some international comparisons are instructive. The private share of R&D spending ranges from a high of 74% in Japan (in 1980) to a low of about 42% in France, with the U.S. and Great Britain in the middle (some 52%). In other words, the U.S. government already pays for one-half of the R&D in the United States.[3]

According to the Japanese Machinery Exporters Association, private sector R&D constitutes one of the major sources of improvement in the competition edge of Japanese industry in the world market. This is because, first, the private sector focuses on production techniques and commercialization of products. Second, the time constraint is altered -- years are not lost trying to process applications for government funds. There is mounting evidence that the private sector, including venture

[3]Japan Machinery Exporters Association Newsletter, March 1983, p. 1.

capitalists, will support research and development, particularly if large gains are foreseeable as, for example, in the area of agricultural and plant genetics. And, third, the fact that in Japan the private sector leads in R&D investment means intense competition for technical development among all businesses.

Industrial Targeting

Industrial targeting as a component of industrial policy, particularly as it is practiced in Japan, has come under increasing criticism. Some contend that industrial policies implemented by Japan inherently discriminate against imports, and therefore must be "fundamentally restructured". Others urge a dismantling of the system by which the Japanese government is alleged to coordinate with and administratively guide private business sectors, especially clusters of companies grouped around banks and trading companies known as "keiretsu". Still others challenge the government-initiated R&D consortiums with taxpayer funding of seed money as giving the Japanese companies an unfair advantage over American firms who must pay for R&D funding out of current earnings.

The fact is that the terms "industrial policy" and "industrial targeting" have become pejoratives only when applied to Japan. In any event, the use of these terms tends to obfuscate rather than clarify the issues. A bit of history may be helpful in clearing away some of the obfuscating gloss which these terms have acquired.

The notion of targeted funding of designated industries regarded as important to national economic growth has its

beginnings in the keisha seisan hoshiki, (priority targeted production system), developed by an informal advisory group and adopted by both the Japanese government and the Supreme Commander for the Allied Powers (SCAP) in 1948. The unwieldy term, priority targeted production system, was described by one of the advisory groups who developed the idea as follows:

> Our idea is to concentrate our efforts on increasing the production of coal, which is one of the most important basic materials, and which is present in Japan. We insist that all economic policies should be geared to this purpose. This has the highest priority among policies. This high priority may not be long assigned to this particular policy, and possibly it will not be necessary for a long period. However, when we cannot expect an all around increase in production because of numerous constraints and difficulties, there is no alternative but to concentrate on a few basic commodities and through the increased production of these items, we may create the possibility of gradual recovery of over-all production activities.[4]

At that time, the first phase of the Occupation, namely the demilitarization of Japan and programs to democratize its social and economic structure such as land reform, promotion of labor union activities, and the dissolution of the zaibatsu holding companies, was implemented. At the same time, with the complete destruction of the industrial base, both industrial and agricultural production were at a virtual standstill. It was this standstill in industrial and agricultural activities, and the consequent rampant inflation and serious food shortage, that shaped the thinking of the advisory group, who concluded that direct economic controls, including allocation of scarce

[4]Arisawa, Professor Hiromi, "Measures to Prevent Economic Collapse", Hyoron, January 1947.

materials and capital funds, rationing of food and other necessities, and price controls, were imperative. The first of these industries targeted for special materials and funding priorities was coal mining and steel, and SCAP approval of importation of heavy oils was requested to increase steel production so that mining and hauling equipment could be made available to reopen and step up coal mine production.

The priority targeted production program, assigning top priority to coal production, resulted in output exceeding by 3 million tons the then virtually impossible target of 27 million tons. Increased coal supplies, in turn, accelerated the recovery in basic goods production including fertilizers and cement, and helped in rehabilitating the railway system. Thus, the government-mandated targeting as a technique designed to promote economic recovery and subsequent growth had its genesis in the priority targeted production system developed during the Occupation in circumstances of severe materials, energy and food constraints, and rampant price inflation.

There is nothing in its history which could be considered conspirational or sinister. It was simply a very practical response to an overwhelming need for cost-efficient management of resources to speed economic recovery. By 1947, the objective of the Occupation was already shifting sharply from a demilitarization and democratization objective to hastening economic recovery because of the onset of the Cold War and the change in U.S. military and foreign policy objectives in East Asia, vis-a-vis the Soviet Union.

During the 1950s and 60s, Japan's national policy emphasis shifted from economic recovery to economic growth. The fact that this new national policy gained broad popular support is probably the key to the stunning economic growth that Japan achieved during these years in increasing productivity, upgrading product quality, and developing international cost competitiveness over a broad range of products including steel, shipbuilding, and consumer products.

The dynamics of the economic process in Japan suggests that increased Western protectionism against burgeoning Japanese exports, starting with the cotton textile products, has effectively served to assist the Japanese government in accelerating disinvestment out of materials, energy and labor intensive, low growth, mature technology industries and shifting investment into non-polluting, technology and capital intensive high growth industries. Conversely, protectionism in the United States, beginning with the bilateral cotton textile agreement in 1956, the multilateral textile export restraints agreements in 1962, and the multifiber textile export restraints in 1968, has served to retard the technology-driven economic process of resource disinvestment out of the mature technology textile industry. In the context of this constant process of technology-driven economic shifts in resource commitments, one unfortunate result of protection is the entrapment of workers, managerial staff, and capital in an industry facing substantial shrinkage as America's level of interdependence grows. The same thing did happen in the vacuum tube radio industry, tube and hybrid type

audio and television industries, as well as companies in the steel industry, which had been using the open hearth process long after more cost efficient steel making technology became available.

In a sense, industrial policy as implemented in Japan is nothing more or less than a coordinated and mutually reinforcing effort, which nudges and guides the underlying technology-driven economic process of disinvestment out of sunset industries and investment in the sunrise industries. The economist Schumpeter has described this weeding out of sunset industries and emergence of sunrise industries as a continuing process of creative destruction.

In any event, the recent spate of protectionism throughout the world constraining Japan will, in my view, stimulate Japanese business toward achieving greater cost efficiencies and generating more new products through increased basic and developmental R&D effort.

As for the United States and other industrialized economies, whether or not these economies will benefit from a temporary constraint on imports, whether in the sunset or sunrise products, will depend in part upon the collective response of the involved companies and their workers. If the respite gained is not used in achieving cost efficiencies, upgrading quality, and promoting longer term R&D, the results most assuredly will be a further diminution of competitiveness when restraints are removed.

Cooperative arrangements need to be sought to create partnerships between U.S. and Japanese producers in the areas of

NC-machinery, robotics and flexible manufacturing systems, and other new technological areas to restore competitiveness and speed renewal of the primary industrial base. It is at the micro-level, the level of the firm in an industry, that innovations -- managerial, technological -- need to be made. These innovations will occur if the entrepreneurial risks are undertaken and backed by sufficient capital.

Let me cite numerous examples of U.S. and Japanese industry working to upgrade the industrial base in the United States.

Table 1

News Reports of Private Sector Japan-U.S. Arrangements

Note: The following selected headline examples are from Kyodo News Service reports.

Date	Headline
Nov. 16, 1982	Japan's Top Security Service Firm to Tie Up with Westinghouse Electric to Undertake Joint Services for American Homes
Feb. 3, 1983	IBM, Mitsubishi Group to Set Up Research Institute
Feb. 3, 1983	Nippon Electric Company Concludes Licensing Agreement with Standard Microsystems Corporation
Feb. 8, 1983	Toyota, GM Agree on Details of Joint Car Production
Feb. 16, 1983	Matsushita, IBM Japan to Study Establishment of Joint Firm
Feb. 24, 1983	Westinghouse to do After-Sale Service For Mitsubishi Electric
Feb. 28, 1983	Robot Press Maker Links up with Minster Machine of U.S.

Feb. 28, 1983	Amada Ties up with Brown and Sharpe of U.S.
Feb. 28, 1983	IHI to Produce Auto Engine Turbo-Chargers in U.S.
Mar. 1, 1983	Osaka Transformer, Allied Corporation to Develop New Product
Mar. 24, 1983	Toyo Tire Teams up with General Tire for Auto Tire Production
Apr. 20, 1983	Showa Denko, Diamond Shamrock to Set up Joint Venture
May 12, 1983	Monsanto Eyes Silicon Wafer Production in Japan
May 25, 1983	Fanuc, GM Agree on Joint Robot Production
May 25, 1983	Hitachi, RCA to Market Video Systems in Britain
May 26, 1983	Okuma Machinery to Give MC Technology to U.S. Firm
May 27, 1983	Nippon Gakki Links up with Olin Corp.
June 14, 1983	IBM Japan to Buy Shares of Computer Sales Firm
June 23, 1983	Kawasaki to Reinforce Ties with Unimation
June 30, 1983	Silicon Carbide Ceramics Joint Venture to be Launched
June 30, 1983	Fujitsu to Start U.S. Production of Fiber Optics Equipment

Today, the U.S. and Japan stand as the two leaders of the industrialized West. It is detrimental to the sound technological and economic development of Western society for these two leaders to be confronting each other's policies in an

adversary posture. America can create jobs, through rewarding saving and investment in innovative, productive business.

Government may have policies and incentives which encourage industry; however, the initiative must come from the private sector. Equipment and production technologies are in general substantially older in the U.S. than in Japan (the average age is something like 16-17 years in the U.S. to 10 years of age in Japan).[5]

In the semiconductor field this can be fatal, competitively. A new generation of semiconductor equipment must be designed and installed every 3 or 4 years - a lag means substantial loss of marketplace in the next generation of semiconductors. Failure to invest in 16K chips in 1975/76 led U.S. manufacturers to put customers on allocation and to purchase 16K RAMs from their Japanese competitors in 1980 as capacity shortages developed. The same thing has happened in 64K RAMs this year and U.S. manufacturers have placed their customers on allocation. What relevance is "industrial policy" or government incentives, or even protectionist measures, if the U.S. private sector does not have a long term, global view of the marketplace and wants government to underwrite all risk?

A conceptual solution will not solve concrete problems. America's problem is that it needs new facilities to make cost competitive, high quality and reliable products. Useful also in appropriate circumstances is a "free enterprise" role for

[5]National Academy of Engineering, U.S. Leadership in Manufacturing, Washington, D.C., 1983, p. 6.

government, with the government taking an equity position in return for its funding. I see no reason why the government cannot become an intelligent investor-partner in rebuilding America's industrial base. A good example now under consideration by Congress is HR 3399 before the House Merchant Marine Committee. This bill proposes a new institutional arrangement which would authorize a Maritime Redevelopment Bank to raise money and hold stock in any companies it invests in to bring the latest technology into the shipbuilding industry. The proposal enjoys bipartisan support in both the House and the Senate.

More specifically, the proposal could be a vehicle to develop, initially in the shipbuilding industry, a public/private leasing company to both finance and lease flexible manufacturing systems (FMS) to U.S. shipyards. The commerical shipbuilding industry is heavily subsidized (FY84 MARAD budget is approximately $450 million) and the Navy spends $1.34 billion a year (FY84 budget). This proposal could reduce budget cost and speed up technological innovation thereby enabling U.S. shipbuilders to diversify and be competitive in world markets in terms of price, quality and delivery time with respect to a broader spectrum of products.

The proposal involves a free enterprise role for government, that of an intelligent investment partner. As envisaged, the government will trade the cost of subsidies, overruns and poorer product quality[6], measurable in dollar terms, for an equity share

[6]See Appendix B, "Admiral Says Shoddy Work Adds 50% to Some Arms Cost", The New York Times, June 26, 1983.

in return for guaranteeing loans to finance some portion of the flexible manufacturing systems (which would be fully collateralized). The purpose of the guarantee is to drive the cost of capital low enough to assure price competitive products. The public/private FMS leasing company is not a bailout because the government is fully secured, receives an equity share, is encouraging the newest technology (not as in the Chrysler case where the technology was eight years old when they bought it) and because there will be incentives for all partners -- business, government and labor -- to make it work.

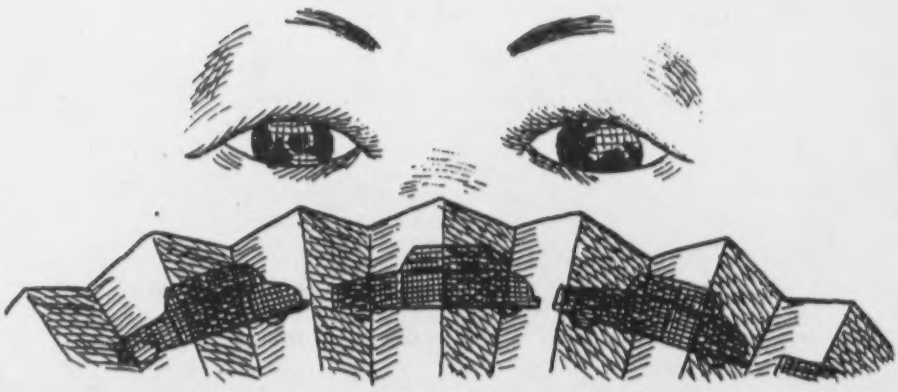
U.S. business is interested, and will cooperate because they see the profit potential in the markets. And labor's equity investment will ensure their commitment to product quality and productivity.

What is shaping up is a genuine tripartite - government, labor, business - initiative to renew America's industrial base. It is a substantial and positive advance.

APPENDIX A

THE SECRET OF JAPAN'S SUCCESS

ELEANOR M. HADLEY



Industrial policy works because public officials and business leaders cooperate to develop key industries. With government assuming part of the risk, industry can take on bigger challenges.

Since World War II, Japan has consciously promoted industrial policy and used it as a technique in trade strategy in a manner that is rare among industrialized countries. This has enabled Japan to compete in world markets by changing the composition, or product mix, of its exports, in addition to the customary means of international competition—price, quality, styling, and marketing.

Japan has also recognized that sales prospects are brighter for certain industries than for others, and has sought to recompose its industrial sector accordingly. For some goods—automobiles, for example—demand increases with rising income. In such cases market forces will do part of the work. But for other products, this does not happen. Shoes are an example: in the United States, per capita shoe consumption in 1978 was lower than it had been a decade earlier.

Japan has understood that deliberate alterations of its economic architecture can produce clear advantages in GNP growth. Therefore, it has fostered manufacturing processes that create substantial in-

creases in value added over the price of raw material inputs. In cutlery, pottery, and toys, this increase in value is modest. But in ships, cars, machine tools, and computers, there is a substantial difference between sales price and costs of material inputs. That is why we speak of such products as high value-added goods.

In making judgments on industries to cultivate, Japan was conscious that its prewar civilian industries—textiles, rubber-soled footwear, and so forth—would before long become subject, as the Japanese-English expression goes, to "chasing up" competition from newly industrializing countries. The country's leaders decided that it would be more comfortable to be the "chaser" than the "chased."

"Architecting" key industries

Early in the postwar period Japan began a policy of nurturing certain important industries, or what I call "architecting key industries." I emphasize "key," for in sharp contrast to centrally planned economies, at no point has Japan sought to plan the whole of its industrial sector. Further, reliance has been placed on the private sector to carry out these public policy decisions. Therefore, "architecting" has been a shared exercise between government and the private sector, again in contrast to the approach of centrally planned economies. Cooperation has been by inducement, not compulsion. Out of this exercise an interesting technique of public policy has emerged, one that might be described as a policy of "socializing" risk. With the government assuming a portion of the risk—oftentimes a small portion—the private sector has felt itself able to undertake challenges that otherwise would have appeared unassumable. As I see it, industrial policy has made a significant contribution to the postwar performance of the Japanese economy.

Among a good many foreign experts, however, there has been reluctance to concede the contribution of industrial policy to Japan's economic performance. For example, with the exception of the late William W. Lockwood, the dominant view among American economists has been to deny the role of industrial policy. Thus, for example, editors Hugh Patrick and Henry Rosovsky selected Philip Trezise to write the chapter on government-business relationships for *Asia's New Giant*. Trezise staunchly believes there is no significant difference in the role of government in Japan's economy and in the U.S. economy.

American political scientists have not been as ready as American economists to argue that the Japanese government role was undistinctive. Chalmers Johnson undertook his recently published *MITI and the Japanese Miracle* out of his frustration with the dominant economic point of view. Curiously, however, after complaining that economists told only half the story, that of the private sector, he turned around and proceeded to tell only the other half of the story himself—the government side. The private sector is scarcely mentioned in Johnson's study. In my judgment, not only has industrial policy played a critical role in Japan's postwar economic performance, but the story cannot be told without speaking of government and private sector together.

There is another dimension to Japan's industrial policy. Not only has it led to the architectural design of key industries, but it has actively promoted higher productivity. This has been done through the diffusion of what is known as "best manufacturing practices." This took place under the Enterprise Rationalization Law, originally enacted in 1952, but applicable through 1976. The law granted a first-year depreciation write-off of 25 percent for "approved equipment" in "approved industries." The write-off was on top of regular and incentive depreciation provisions.

Originally, the intent of the law may have been to tie stimulation of "best practices" to key or target industries alone. But by the early 1970s, political pressures had led to the application of the highly attractive tax feature to virtually the breadth of the Japanese economy. Thus, the Japanese government committed itself to stimulating production under the most cost-efficient procedures available.

Beyond winners and losers

Speak of "industrial policy" to most Americans and the reply is likely to be, "Oh, you mean picking winners and losers." Americans typically conceive of this as a statistical exercise related to historical growth rates. In fact, the Department of Commerce went through such an exercise a few years ago, and came up with automobiles as a winner—showing the absurdity of the whole procedure.

From POLICY To PRACTICE

By MARTIN REIN

"Martin Rein is one of the most penetrating critics of the values and assumptions which inform social policy. His insights into the ambiguities and contradictions embedded in the ideas we take for granted are acute and challenging, and he has an ironic, sympathetic eye for the dilemmas and frustrations of professional practice. But, his work is not simply critical. It represents a profound inquiry into the relationships between values, knowledge and social action, leading towards new conceptions of the uses of social understanding. *From Policy to Practice* makes a major contribution to the critical analysis of applied social science, policy and practice."
—Peter Marris, University of California, Los Angeles

"A common method, concern, and argument underlie all these essays. The method is 'value critical.' The concern is with a more institutionally grounded understanding of why governments do what they do. The argument is substantive, dealing with concrete issues such as the claim for economic resources, social protection and the organization of social services. . . . The canonical (that is, the conventional and normative) view is thrown into question, or the implicit assumption that things do not work as expected, that there is inherently a difference between the text and the message."*—from the Introduction*

MARTIN REIN, the distinguished educator and social worker, is currently professor of urban studies and planning at the Massachusetts Institute of Technology.

272 pages Cloth $30.00 Paper $14.95

M.E. Sharpe Inc.
80 Business Park Drive
Armonk, New York 10504

I believe this conception of target industries quite misses the point of how Japan has selected its industries. Japanese target industries have been selected not only for their own importance but for their ramifying effect on other industries. For example, steel was chosen because, in an industrial economy, steel is the basic building block. Have cheap, good-quality steel, and the products made of it—ships, automobiles, rails, locomotives, heavy electrical equipment—will enjoy a price advantage. A longtime economic observer of the Japanese and American economies, Louis J. Mulkern, has observed: "The loss of world leadership in steel by the U.S. industry to Japan in the 1960s was perhaps the most significant single development in the postwar history of either country."

Many American observers believe that the United States should be given credit for Japan's new steel facilities. It is thought that the United States destroyed Japan's prewar facilities, while we "suffer" the handicap of our own facilities' having come through the war intact. I recall speaking with a Japanese steel representative a few years ago about the different published figures on the proportion of Japan's steel capacity that was destroyed, seeking his judgment as to the correct figure. A smile spread across his face and he asked me what I thought Japan's prewar steel capacity had been. When I learned it was in the range of 6 to 7 million tons—today's capacity is 150 million—it was clearly a splendid irrelevancy what proportion came through the war intact.

Was it market forces alone that raised Japan's steelmaking capacity from the 6 to 7 million range of the war years to its current 150 million tons and made it the acknowledged leader in world steel production? Or was it market forces plus a package of measures that "socialized" a portion of the risk? It was the latter. Government stimulus measures included Japan Development Bank loans at preferential interest rates, which loans in turn gave steel companies improved access to commercial bank credit (for most of the first 20 postwar years bank credit was tight), and a preferential position on foreign exchange at a time when foreign exchange earnings in no sense matched demand. (Before 1964, private industry had to apply to the government for foreign exchange and this was granted if the government judged that such an allocation would benefit the economy. But in 1964, Japan became

an International Monetary Fund Article 8 nation, thus losing the right to allocate foreign exchange.) Up to 1976 the steel companies enjoyed 25 percent first-year write-off on approved equipment. Until 1972 they were able to use a reserve amounting to 1.5 to 2.4 percent of their overseas sales for market development. This latter provision, originally conceived as tax forgiveness, was transformed to a five-year tax deferral basis after a complaint had been made to GATT (The General Agreement on Tariffs and Trade). The steel companies also enjoyed, with all other industries, a few extra "brownie points" on depreciation for strong export performance. Part of the formula for determining these extra points rested on the ratio of exports to total sales; the other part rested on improvement in this proportion. This feature now is applicable only to medium-to-small enterprises.

In view of the foregoing it seems quite implausible to me to deny that there was something distinctive in the government role. However, had Japan's steel companies not enjoyed top-flight entrepreneurial direction, had the companies not been engaged for most of this period in keen rivalry with one another, the government's stimulus measures would have meant very little. Japan's steel program was a joint venture among the steel companies, the Ministry of International Trade and Industry (MITI), and the Ministry of Finance.

Automobiles

Automobiles were selected as a target industry, not only because demand was expected to rise with rising incomes and because they represent a high value-added industry, but for the number of other industries autos would stimulate—glass, rubber, road-building machinery, and so forth. Japan proceeded to grow an automobile industry in much the same way it grew the world's most efficient steel industry—by combining government assumption of some risk with outstanding private entrepreneurial talent and fierce rivalry among the several companies.

Prewar Japan's automotive industry consisted overwhelmingly of trucks. GM and Ford dominated the passenger car market prior to World War II. After a lengthy debate within the government in the early 1950s, Japan committed itself to growing an automobile industry. Then high tariff walls were created, and when some European producers got in over the 40 percent tariff, foreign exchange was denied those Japanese wishing to purchase such cars. There might have been competition from the second-hand car market when Occupation personnel sold their cars on leaving Japan. But this was also closed off through the control of foreign exchange. Foreign production within Japan's protected home market was stunted through the Foreign Investment Law, which required government approval for investment within Japan. While the companies were left to find the technology they hoped to license, and to work out tentative arrangements with the licensor, approval for the arrangement did not become final until MITI was satisfied with the terms negotiated. MITI frequently insisted on better terms for Japan's companies. In terms of auto parts, MITI's 1952 guidelines required that on expiration of the licensing agreements, there must be local production of the parts covered by the technical agreements. The same types of credit and tax features that steel enjoyed were applied to the automobile companies.

Reserving the home market for Japan's automobile companies enabled these initially high-cost producers to develop economies of scale and to come down the "learning curve." It was in the early 1960s that U.S.-Japan bilateral trade in automobiles broke even. By 1970 the Japanese surplus in this commodity line was three-quarters of a billion dollars.

There are few who would challenge the fact that infant industries need special protection. What foreign governments had strong complaints about was the slow rate at which the Japanese government reduced tariff protection and nontariff barriers (NTBs). For example, automobile rates in the late sixties and early seventies were:

on small cars:	
as of July 1968	36%
as of January 1970	34%
as of May 1970	20%
as of April 1971	10%
on large cars:	
July 1968	28%
April 1969	17.5%
April 1971	10%

In addition, Japan imposed a 40 percent commodity tax on the purchase of large cars (almost all of which were foreign) and a 30 percent commodity tax on smaller cars. The commodity tax on imported cars was imposed "cif," the tax on domestic cars ex-factory.

Currently the Japanese government has a keen appreciation of the place of computers in a "post-industrial" society. Just as it saw steel as the basic building block of an industrial economy, so it sees computers as the basic building block of an information processing society. Hence the emphasis given this industry since the early 1960s.

The computer industry posed a number of new problems to the architects of target industries. There was no earlier Japanese production to serve as a base on which to build. Foreign production could not be excluded from the Japanese market because IBM Japan was already there. Further, in order to get into production, Japan had to have IBM licenses. Tariffs, however, could be used to exclude foreign imports during the initial period. In this industry, in addition to the other usual stimulus measures, the government provided some research and development funds, it developed target objectives, it encouraged joint research, and it sought to expand demand for Japanese computers by developing a joint leasing arrangement to compete with IBM's leasing arrangement. However, it must be stressed again that the government program was the product of a joint strategy devised by government officials and industry leaders. The strategy would not have worked had Japan's business executives not been of top-flight quality, willing to commit their own funds to these exceptionally bold objectives, and in keen rivalry with one another.

National purpose, company pride

Japan's postwar industrial achievements have had a sense of national purpose about them. Up until the early 1970s when the scale of pollution and environmental degradation became intolerable and environmental controls were introduced, there was extraordinary national consensus on GNP growth. It was as if, deprived by its Constitution of contesting for world position through armaments, Japan chose to contest through industrial excellence. The strategy obviously generated more domestic excitement as Japan was coming up to the per capita income level of the European and American economies than it did after Japan had drawn abreast.

It should be noted that the relationship between government and the private sector on industrial policy has undergone significant change since World War II. In the chaos of the immediate postwar years, with demand far outstripping supply in product after product, the government held authoritative power under the Temporary Demand and Supply Law. It was "sticks," not "carrots," in those years. The law expired in 1952 and thereafter objectives had to be jointly set. Goals were implemented by the offering of enticements, by the government's assuming a portion of the risk entailed in the mutually determined high-risk endeavors. Chalmers Johnson in his *MITI* study seems to feel that target industries have been "riskless" lines of endeavor. Nothing could be further from the truth. Private business has committed huge amounts of its own money to carry out these high-risk projects. It was because of the private commitment of funds that there was no way the government could go beyond what business was willing to do.

In this regard it is noteworthy that MITI did not win all the arguments with business. Take the case of the automobile industry. In the mid-fifties MITI, impressed with the importance of economies of scale, wanted to see the development of a single type "people's car," with MITI to select the producer out of a national competition. The industry was not interested and that was the end of the "people's car." Similarly, in the early sixties MITI, again motivated by a concern for economies of scale, wanted to see the automakers—Japan had eight then and now has seven—divided into three groupings with each concentrating on a single type of car. Lacking the ability to persuade the companies through administrative guidance, MITI sought legislation giving it, among other provisions, power to compel such steps. Three times this legislation was submitted to the Diet and three times it was unsuccessful. The Fair Trade Commission joined with the industry in vigorously opposing it.

The power of MITI and the Ministry of Finance was significantly reduced in 1964 when Japan lost the privilege of allocating foreign exchange due to its becoming an IMF Article 8 nation. Since the

early 1970s the power of these ministries has been further reduced by industry's lessened dependence upon bank financing and the liberalization of foreign investment and the capital markets. In 1980, transactions on the Tokyo Stock Exchange, measured by value on a per capita income basis, were as large as those on the New York Exchange. The rise in the importance of equity financing reduces the role of government.

The free market paradox

With all the current emotion over the imbalance in the U.S.-Japan merchandise trade, there may be a good many observers who hold that it was "unbecoming" of the Japanese government deliberately to foster economic rationality, that this has given Japanese producers unfair advantage. With equal logic, however, the opposite conclusion might be drawn: that it would be helpful if the governments of other private enterprise economies worked comparably, in conjunction with their private sectors, to encourage economic rationality.

As market forces operate—in the American economy and elsewhere—there is striking imbalance in the position of capital and labor. Capital is free to go anywhere in the world in search of profit. In fact, most people of property doubtless regard this as a "divine right" of capital. Labor, on the other hand, is essentially bound to the nation. There have been some experiments in moving workers across national boundaries to jobs, but the record shows more minuses than pluses.

While capital is global, knowing no national borders or national allegiance, the world consists of nation states which individually think in terms of national security, that is, in terms of national economies. No one can have lived through the postwar period without being impressed with the rich gains that liberal trade under American leadership has brought. But one cannot ignore serious adjustment problems in one's own country when a major industry loses international competitiveness.

I find it an instructive exercise to go back to the early postwar years in Japan and review that period. Everywhere there was pessimism about Japan's future. The British were so pessimistic that they thought we Americans were seriously misguided in proposing dissolution of the *zaibatsu* (holding companies) for, as the British saw the matter, Japan needed every possible ounce of its resources just to survive. John Foster Dulles, who negotiated the Peace Treaty for President Truman, is reported, according to Orville McDiarmid, to have humorously observed "as late as 1952 . . . that suicide was not an illogical step for anyone concerned with Japan's economic future." Even in the mid-fifties, the World Bank was doubtful of Japan's future credit-worthiness.

What did all these foreign observers (and a number of Japan's economists as well) leave out of account? What did they fail to put into the picture? Was it that they were thinking in terms of market forces alone and thus conceiving that the Japanese economy would probably be focused on textiles, apparel, cutlery, rubber-soled footwear, toys, and Japan's other prewar civilian industries? Was it that they were thinking of the prewar pattern of national income distribution with its sharply skewed curve resulting in a stunted domestic market? Was it that they failed to include the gains out of international trade that successive GATT rounds would bring? There are obviously lots of possible nominations here, but a major omission, I would guess, was the failure to imagine that Japan would deliberately restructure its industrial base. Changing Japan's key industries to income-elastic and high value-added industries in conjunction with the democratic reforms of the Occupation brought enormous advantages to Japan and to the world.

However, a bias developed in Japan's trade pattern that has come to be felt with increasing keenness as the economy has grown in size. While manufactured goods are the only products Japan has to export, as a mature industrial power Japan has an obligation to import manufactured goods as well as agricultural products and industrial raw materials. Just as Japan sought to move into higher value-added products for the benefit of its economy, so those economies strong in high value-added goods expect to be able to enjoy sales of their wares in Japan's market. It is evident that Japan has seriously neglected this side of the coin.

Industrial policy: redefining economic rationality

Nevertheless, the comfortable American assumption

that the difficulty of selling in the Japanese market is entirely attributable to barriers—seen and unseen—is unpersuasive. It is abundantly evident that we have difficulty competing with Japan in the American market, as orderly marketing arrangements, trigger price mechanisms, and "voluntary restraint" agreements attest. Japan does not possess tariff and nontariff barrier advantages over American goods in the American market. Further, as study of export performance in third markets shows, we are not matching Japan's performance here. (The current serious misalignment of the yen-dollar rate makes it all but impossible for American companies to compete with Japan.)

This brings us back to the issue of industrial policy. The present American administration is deeply committed to the "magic of the market." But that "magic" means that American capital has no loyalty or commitment to the American market. It is after profits wherever in the world profits are to be found. Further, capital has no commitment to physical production. Paper profits are quite as satisfactory as physical production. Since we are competing with a strong industrial nation that emphasizes prowess in physical production, it is unsurprising that we find ourselves erecting a growing array of trade restraints. Financially it may have made eminent sense for U.S. Steel to commit several billions to buying an oil company, but such strategy does nothing to refurbish the ailing American steel industry. Looked at dispassionately, our American thinking has a curious dichotomy to it. On the one hand we think in terms of national security and see the nation as the relevant economic unit. On the other hand, when we focus on capital we take the world as the relevant unit with no nation-states in it at all.

Apart from the near-crisis dimensions of the current misalignment of the yen-dollar rate, if we Americans want to be competitive with Japan we need to think of the shape of our domestic economy as well as attractive investment opportunities on a global basis. We should start by taking a national economic inventory. Such an inventory should include the age of plant and equipment in our key industries and the extent to which best manufacturing practices are diffused through the industry. (While it was the United States that developed continuous casting in steel in the early sixties, it came to have the lowest diffusion of this efficient process among ten industrialized countries. By the latter sixties, Japan overtook the United States and has remained the country with the largest proportion of steel produced by this method.) We need to take note of our labor force. How can we add skills our industrialists will be needing? How can we cope with widespread near-functional illiteracy? We need to note where our labor-management relations are strongest and where weakest and the factors accounting for the difference.

It is common in the United States to assume that Japan is the land of monopoly and cartels, that it is we Americans who operate under the "handicap" of competitive markets. But most of Japan's markets are characterized by powerful competition. When corporate success is defined in terms of market share, rather than return on investment, the objective has a galvanizing effect on management and labor alike—when labor can be made to feel part of the enterprise, which sometimes happens with us and oftentimes does not.

Where do I come out on the issue of industrial policy? I favor wider national adoption of its procedures. If such were to occur, additional protocols would no doubt need to be added to GATT, such as, for example, standards governing permissible depreciation limits. I have thought for some time there should be standards here. Industrial policy is designed to operate national economic policy with maximum rationality when the unit is the nation. Since we are far short of world government, it makes sense to pay attention to the state of our national economies as well as global investment opportunities. Heightened economic rationality in domestic economies, with a simultaneous awareness of global responsibilities, should stimulate, not inhibit, world trade.

ELEANOR M. HADLEY is Adjunct Professor of Economics at George Washington University and has worked for a number of years as a senior economist with the U.S. government. In 1943 she served with the U.S. Office of Strategic Services (OSS) and in 1944 with the U.S. Department of State to work on policy toward the *zaibatsu* (Japan's holding companies). She participated in the drafting of the economic portion of the Basic Directive for the Occupation and later assisted in implementing the dissolution of the *zaibatsu*. This article has been adapted from Professor Hadley's essay in *The Journal of Japanese Trade and Industry* and is reprinted by permission of the Japan Economic Foundation.

APPENDIX B

THE NEW YORK TIMES , 6/26/83

Admiral Says Shoddy Work Adds 50% to Some Arms Cost

By RICHARD HALLORAN
Special to The New York Times

WASHINGTON, June 25 — A senior Defense Department official says that shoddy work by military contractors is adding even more to the cost of military equipment and weapons than an estimate of excesses cited earlier this month.

The officer, Rear Adm. Frank C. Collins Jr., said in an interview that the previous estimate of 10 to 30 percent added costs was "conservative." That estimate had been made by Deputy Secretary of Defense Paul Thayer.

Admiral Collins, who is executive director for quality assurance at the Defense Logistics Agency, said the cost of many products was 50 percent higher than it should be because contractors failed to make things right the first time.

"It's eating us up," he said, speaking of the loss of military power caused by excessive costs. President Reagan has proposed spending $94 billion for military procurement in the fiscal year 1984, which begins Oct. 1.

Stung by criticisms like Mr. Thayer's, executives of military contracting concerns have said their problems with quality control are not as bad as portrayed. Moreover, they say they have started programs to make improvements.

Those executives have also pointed at the Defense Department, contending that specifications are often too stringent, deadlines for delivery are too tight and contracting regulations are confusing. Admiral Collins and other senior officers say they agree with this in part and are examining ways to correct the situation.

The admiral said producers of electronic equipment were the worst offenders, adding that the yield of satisfactory products in that industry was only 30 to 40 percent, meaning that 60 to 70 per-

Continued on Page 23, Column 1

FOR INFORMATION ABOUT HOME DELIVERY of The New York Times in New York, Boston, Philadelphia or Washington, call toll-free 1-800-631-2800. - ADVT.

THE NEW YORK TIMES

Waste Is Blamed for 50% of Some Arms Cost

Continued From Page 1

cent of the products had to be remade or thrown away.

The nation's armed forces increasingly rely on electronics for computers and naviagation, radar and communications equipment. Manufacturers figure into contracts the cost of reworking or scrapping items, thus passing on costs to the taxpayers.

Admiral Collins said manufacturers of uniforms and other clothing items also had high rates of waste, as did producers of cruise missiles and their suppliers. Other offenders are builders of submarines, he said, excepting nuclear propulsion systems, which are made separately.

On the other hand, he credited the manufacturers of aircraft, diesel engines and trucks with low rates of work that needed redoing or items that were wasted in scrap. He said refineries, in particular, had low waste rates.

The admiral organized conferences last spring and again this spring in which Pentagon officials and senior military officers urged industrial leaders to insist on quality. Until then, Pentagon complaints had generally been expressed privately.

Admiral Collins, who said he had inspected more than 200 factories over the last two years, said a lack of integrity in some executives was one reason for poor quality.

Even though the Defense Logistics Agency has 6,450 inspectors in plants to watch quality control, they must monitor 280,000 contracts, he said, adding, "It's physically impossible to catch everything if the contractor wants to beat you out."

Another reason, he said, is that top officials in many companies are often not interested in quality assurance. Few companies set quality goals of "zero defects," the admiral said, asserting that workers "recognize from the beginning that management was not really interested in doing it right the first time."

Moreover, he said, workers are poorly trained. "The whole issue is making sure that people know what they are doing," he added.

Push for Advanced Technology

The admiral touched on still another problem when he said an excessive push for advanced technology meant, for example, the production of an engine so new that its technology was untested. "Sometimes I feel that we are so in love with the state of the art that we really don't wait to see how to make it right," he said.

Weapons are often designed without much thought as to how to produce them, Admiral Collins said. He added that weapons and equipment should be designed so that they can be produced on an assembly line and not just in a research laboratory.

He said production controls were often inadequate. "It is more important to control the process than to inspect a product at the end of the line," he said, asserting that waste could be reduced by correcting mistakes in the middle of the process, making it unnecessary to scrap the finished products.

Some industries are hampered by obsolete machines and insufficient maintenance. He told of plants where old machines were unable to hold the fine tolerances needed in advanced weapons.

While Admiral Collins cited faults in industry, he also said the Defense Department was partly to blame by setting unrealistic specifications and strict deadlines in contracts, thus forcing contractors to cut corners on quality to make deliveries on time.

In addition, he said, the Defense Department permitted too many companies to win contracts with unrealisticly low bids, thus forcing them to cut into quality so they could make a profit.

GIVE A CHILD A CHANCE:
THE FRESH AIR FUND

Representative LUNGREN. Thank you, Mr. Tanaka. The final member of our panel to present his oral testimony is Mr. Philip Trezise—is that correct? I've heard it pronounced a number of different ways.

Mr. TREZISE. Yes, so have I. [Laughter.]

Representative LUNGREN. I'm sure you have. We've had it a number of different ways at these hearings, as a matter of fact—from the Brookings Institution.

STATEMENT OF PHILIP H. TREZISE, SENIOR FELLOW, THE BROOKINGS INSTITUTION

Mr. TREZISE. Thank you. I should begin by saying that my remarks are my own responsibility and in no way can be said to represent the views of the Brookings Institution, its trustees and officers.

I'd like to say, Congressman, that if the term "industrial policy" has any real content, it must mean that public authorities deliberately act to direct or divert resources to certain selected, chosen industries or sectors. And there are many ways that governments can do this. They can provide outright subsidies. They can provide concessional loans. They can give tax breaks. They can provide import protection. They can run one form or another of competition policy. And they can exhort or guide the private sectors in certain directions.

Now Japan has all of these instruments of policy, of course, and it uses all of them. The question, it seems to me, is not whether Japan has an industrial policy. After all, they say they have one. The question, rather, is whether one can find that the instruments of policy are combined and applied in a coherent, selective fashion to pick winners and discourage losers.

And I think by that test, the evidence is that they are not so combined or applied.

Let me begin with subsidies. The Japanese central Government budget, of course, includes subsidies for private parties and for several purposes. The most important subsidy by far is for agriculture, which is not, by international or any standards, a cost efficient industry.

The next largest set of subsidies goes to the energy sector. Now this makes a great deal of sense, no doubt, in the Japanese context. But I would submit that Japan would have subsidies for the energy sector if the term "industrial policy" had never been invented.

The third largest set of subsidies to the private sector goes to small business. And as with agriculture, the political quotient in the subsidy to small business is quite large.

A final large subsidy goes to a public sector enterprise, the national railways, which has to be heavily subsidized.

Now, reference has been made to R&D by earlier speakers and it's a subject that entrances many of the enthusiasts for industrial policy. Japan, like other modern countries, provides grants in aid to R&D in the private sector. And publicly financed R&D is considered, as I say, by many to be an extremely significant part of Japan's industrial policy. This can't be because the size is so great because, in fact, Japan spends less in proportion to GNP or national income than any other industrial country. Nor can it be because Japan's public R&D subsidies are carefully targeted, for fully half of the limited amounts that

are spent go to general university funding; that is, to administration and salaries and so on in universities, rather than to specific projects.

MITI, which is supposed to be the architect of industrial policy, gets about 12 percent of public R&D funds and about half of that 12 percent goes to a number of energy projects, leaving, as I calculate it, about $350 million for everything else. This is not a small amount of money, but, by comparative standards, it is almost trivial.

It's hard to believe, indeed, that these relatively modest sums can have had great influence on Japan's successful manufacturing industry. On the other hand, private sector R&D apparently is now relatively larger than in the United States.

Reference is made to concessional or preferential lending. Well, Japan has a development bank, the Japan Development Bank, which has an official mandate—to promote industrial development and economic and social progress. The bank is funded out of postal savings deposits, primarily, and it's therefore able to make loans at somewhat below commercial bank interest rates.

To whom does the bank lend? Well, from year to year the pattern is fairly constant. Most of the loans go to what we would call public infrastructure projects—energy, urban and regional renewal and development, pollution prevention or amelioration, and a constant borrower, the ocean shipping industry, the merchant marine, which, incidentally, is a chronically ill industry.

At the end of the line, about 12 percent of the development bank lending program is devoted more or less to high-tech and related activities. As of fiscal 1981, this meant that the bank loaned some $600 million equivalent to what might be thought to be the key objectives of a selective industrial policy. In that fiscal year, private plant and equipment investment was running at about $180 billion. So the $600 million does not strike this observer at least as a decisive amount for shaping Japan's industrial future.

A look at tax policy is equally unrewarding if you're looking for a highly articulated and coherent approach. Japan has a whole range of tax breaks for various sectors and various industries in the tax code. But these are not targeted in a way that is usually believed. All kinds of industries get something from the tax code. But the great majority of the beneficiaries are not those that would be expected of the kind of industrial policy that is usually said to characterize Japan.

For a single example, the investment tax credit in Japan is limited to industries that are designated as "permanently depressed," or to certain small and medium businesses or, as an alternative to special depreciation allowances, to certain kinds of equipment for saving energy or saving oil.

This is a selective tax credit, but it's not selective in a way that one is led to believe is the manner of selection in Japan. As a matter of fact, our own investment tax credit is enormously larger. It is across the board for everybody. If there's something useful in the investment tax credit, we have it, not Japan.

As for import protection, well, the past is the past. Japan was certainly a protective country up until the 1970's. As Professor Patrick says, it protected virtually everything, to the point that it's not clear that protection was very useful to anybody.

But nowadays, protection is afforded primarily to agriculture and to processed foods, which are related to agriculture, and to certain semimanufactures, such as plywood and refined metals and so on.

In the manufacturing sector, the protection goes to the weak, of course, as it does in all countries, and among the weak is the textile industry.

The assertion that Japan protects only the growth industries and willingly allows the weak sisters to be discarded, to be killed off, is simply fiction.

Now for competition policy as an instrument of industrial policy, it's fair to say that Japan, Japanese thinking, official thinking, and, I think, private sector thinking, is directed toward discouraging, quote, "excessive," unquote competition and toward encouraging large units for economies of scale.

On the whole, it has not been a total success. There are many Japanese industries which are characterized by a multitude of small firms—the clothing industry, for example—which have successfully resisted decades of efforts, Government efforts, to get greater consolidation. As a matter of fact, there are more small firms in the clothing industry now than there were, relatively and absolutely, than there were 30 years ago.

Some big industries, like autos and electronics, are vigorously competitive industries, as we well know. There are others—I might mention petroleum refining—which have been closely managed by the Government, which are less vigorously competitive and these are, by and large, the less successful Japanese industries.

At the present time, the Government is trying to supervise an orderly reduction in capacity in industries like aluminum, certain petrochemicals, and chemical fertilizers. The basic technique is to organize a shared plan of scrapping productive facilities. This policy is now going into its 6th year. They had a law passed in 1978 to accomplish these objectives. That law has now been revised and renewed and we are starting on a second cycle of 5 years to accomplish the restructuring, so-called, of these depressed industries.

This is a form of industrial policy. I have no doubt about that. Whether it's a better form of industrial policy than allowing firms to go bankrupt is, it seems to me, an open question. It's not necessarily foolish, but it's not necessarily going to be the best economic policy, either.

Well, finally, among Government instruments, there is, of course, the ability to exhort and to guide industries to do certain things. And in the Japanese tradition and considering the close relationship which does, indeed, exist between Government and business, this part of policy is clearly not beside the point or irrelevant.

One aspect of exhortation, guidance, and so on are the so-called visions of MITI, which Professor Adams has referred to with some enthusiasm. I would rather consider the so-called visions as committee documents which are discursive, go widely over the economic and even political horizon, and are, as the London Economist says, not much more than collections of platitudes.

In any case, it's very hard for me to believe that firms like Nippon Electric or Matsushita or Komatsu or others among Japan's indus-

trial giants, really are willing to risk large sums of their funds on investments solely because some Government bureaucrats have had a vision.

The elaborate mechanisms that the Japanese have developed for consultation between business and government undoubtedly serve useful informational purposes. But it takes an act of faith to believe that out of these consultations and decisions come the decisions to make large production changes or large investments. Unless, that is, the Government is putting up the cash, which it is not.

So I come out with the view that while Japan's industrial policy is an interesting subject, one that has preoccupied a number of American observers and many Japanese as well, there isn't much that our Government is going to learn from it. We do many of the things that the Japanese do. We do them probably as badly as the Japanese. And it's not clear to me that they make any more sense here than they do in Japan.

The Japanese policy is not aimed with precision at new industries. The resources that are used for industrial policy in Japan are quite modest; in fact, small. Industrial policy is not free of political pressures in Japan. Japan has a lively political life and politicians have their say, too, as they would, of course, in our country. The Japan Development Bank was initially construed or considered to be something similar to our Reconstruction Finance Corporation. Well, our Reconstruction Finance Corporation, as you know, ended, went to its death in a scandal. Japan has been more fortunate.

In the end, to ascribe Japan's successes to the mixture of measures that go under the general term of "industrial policy" has to be, it seems to me, an act of faith and not a finding based on any relevant evidence. Thank you.

[The prepared statement of Mr. Trezise follows:]

PREPARED STATEMENT OF PHILIP H. TREZISE*

Industrial Policy in Japan

Japanese officials, politicians, and ordinary citizens will tell you that Japan has an industrial policy. So will many outside observers, some of whom write articles, monographs, and books about it. I will not quarrel with this multitude of believers.

The government of Japan does in fact devote a considerable amount of attention to the various parts of the national economy. It has institutions of long standing to facilitate consultations with private business. It has a Development Bank. It of course has the power to tax or not to tax, to protect or not to protect, to subsidize directly or not to subsidize, and so on. Periodically, it presents statements—called plans or visions of the future—which identify economic problems or technological possibilities that are considered to be deserving of bureaucratic concern and action. I find understandable the often arrived at conclusion that all these institutions, authorities, and procedures are combined in a coherent fashion to promote Japan's economic growth and international competitiveness.

A closer look raises many doubts, however.

* The views expressed in this statement are the sole responsibility of the author and do not purport to represent those of the Brookings Institution, its Officers, Trustees, or other staff members.

If industrial policy is anything more than a catch-phrase, it must mean that the government acts deliberately to assure that resources of capital and labor will go predominantly to the most promising sectors of the economy. In Japan's case, obviously, these will include though not be limited to potential export sectors. By definition, a successful export sector must be capable of achieving international competitiveness.

Pursuit of such a policy calls for foresight or predictive skill. These are not commonplace qualities in any country. It also calls for a great deal of political forbearance. The more that public authorities have their attention diverted to backward or declining sectors, the less will be available to underwrite the chosen industries, the industries of the future as the saying goes. Yet, as experience tells us, the backward or declining industries tend to have a priority claim to political consideration, at least where popular elections are in vogue. Japan has frequent elections.

Subsidies. A straightforward way for governments to influence private economic decisions is to provide grants-in-aid, that is, outright subsidies. Most governments do so. Japan is no exception.

Who gets the subsidies? Foremost is agriculture and within agriculture the rice producing sector. Rice is produced in Japan at three to four times the price prevailing in world markets. The excess cost is shared between the Japanese consumer in high retail prices and the government (i.e. taxpayers) in price supports. Rice supports together with other subsidies make agriculture easily the most costly Japanese industry in terms of budget outlays.

Next most costly is energy. Two oil crises have made Japanese politicians exceedingly sensitive to the country's dependence on imports of energy fuels. Energy expenditures are concentrated on nuclear power—including reprocessing, the breeder, and fusion—and on coal and oil (exploration and development, storage, stockpiling, etc.). Although these subsidies may be said to be a part of an industrial policy, the reality is that Japan's government would be spending money on energy security if the term industrial policy had never been invented.

Small business is third in line. Special assistance to this private sector is an old story in Japan. Its rationale, needless to say, is heavily political.

A large claim on the budget is exercised by the loss-making national railways. Subsidies to sustain the publicly owned rail system might be considered to be part of a carefully designed industrial policy, if one supposed that every branch line and all the members of an overmanned work force really are indispensable.

Finally, the Japanese government, like its counterparts elsewhere, finances some of the nation's R&D out of public funds. This subject deserves separate attention because of the perception abroad that Japan's public R&D spending is verylarge, carefully targeted, and economically exceptionally rewarding.

R&D. Large it is not. Among the principal industrial countries, Japan comes in last in terms of publicly financed R&D in relation to GNP. To be sure, only a tiny fraction of Japan's R&D budget goes to defense, as compared with, say, the 62 percent of the U.S. fiscal 1984 R&D budget submission that would be assigned to defense-military

functions. Still, after adjusting for this disparity, Japan's public R&D spending is less than half that of the United States. (Private R&D, on the other hand, has surpassed that of the United States in relative terms.)

As for official R&D being meticulously aimed at commercial goals, roughly half of Japan's official spending is disbursed by the Ministry of Education, mostly to the universities as general grants for the advancement of knowledge. Since these grants are on long tether--they can be used to finance faculty salaries, libraries, and administration--it is fair to put them down as being primarily funding for basic research, rather remote from industrial applications.

Another quarter of the R&D budget, more or less, goes to the Science & Technology Agency, which pays for space and oceanic R&D and for much of energy R&D.

The Ministry of Agriculture is scheduled to receive during the current fiscal year four percent of all public R&D money, twice the share that has been asked for agriculture in the U.S. budget.

One finds at the end that the Ministry of International Trade & Industry, or MITI, is to have control over only 12 percent of public R&D financing in fiscal 1983. Since more than half of that is supposed to be spent on energy R&D, the remainder is perhaps $350 million to do all the multifarious things that MITI is popularly supposed to do in the way of providing R&D in support of manufacturing industry.

Mention should be made of tax benefits for private R&D spending. Japan's tax code allows a credit of 20 percent of R&D expenditures that are in excess of the amount in the highest earlier year, subject to a ceiling of 10 percent of the firm's total tax liability. (The

comparable U.S. figure is 25 percent, calculated against the three previous years' average and with no ceiling.) Also, associations formed to conduct research may write off equipment investments in the first year--an incentive for cooperative research projects.

Tax subsidies. These R&D tax provisions are among a large number of "special tax measures" in Japan's tax legislation. All of them have the intended effect of reducing tax collections so as to favor one or another kind of economic activity. In the United States, we say that these kinds of provisions lead to tax expenditures; Japan's Ministry of Finance compiles the results as "revenue losses."

The literature on Japanese industrial policy commonly attributes much significance to these selective tax benefits. Selectivity is there all right, but not quite as advertised. All manner of tax benefits are provided--accelerated depreciation, increased initial depreciation, tax free reserves, tax exemptions, tax credits, and depletion allowances--but the beneficiaries can hardly be said to have been selected because they are uniformly industries of the future. The restaurant industry, food processing, textiles, paper & pulp, non-ferrous metals, agriculture, mining, forestry, and merchant shipping enjoy or have enjoyed special tax favors, along with steel, chemicals, certain machinery sectors, and other more commonly remarked candidates. Investors in housing built for renting has long benefited from accelerated depreciation allowances. Today robotics investors are similarly treated. So are airlines when they buy new planes (which Japan does not produce).

Not only are special tax measures for the industrial-business sector a hodge-podge but the total amounts at issue are surprisingly small. The Ministry of Finance calculates that in fiscal 1981 the gross revenue losses from all special tax measures were about 1100 billion yen, say, $5 billion. Half of this was attributable to various small savers' exemptions, as on interest earnings from bank deposits under 3 million yen. Another one-fourth was the result of such things as tax benefits for doctors whose fees from the social insurance program are considered--by the doctors--to be unduly parsimonious. The remainder, something over a billion dollars, was spread over all of Japan's business world. Comparisons may or may not be wholly fair in these matters but it is at least worth remarking that Office of Management & Budget estimates of U.S. tax expenditures for fiscal 1984 include as only one of the line items a figure of $14.6 billion for the investment tax credit and certain related tax benefits for industry.

The Japan Development Bank. Japan has a second budget, known as the Fiscal Investment & Loan Program (FILP). It is financed out of postal savings and other fiduciary deposits with the government and is disbursed in the form of loans at concessional rates. Some students and journalists have found in it one of the keys to Japan's economic successes. Viewed more soberly, the FILP is a Japanese parallel to our tax-free federal, local and state bond issues and the Federal Financing Bank. FILP lending is in main part to local governments, housing, highway corporations, regional development projects, and so on. That these kinds of activities are funded more cheaply than in the private market is hardly uncommon among advanced industrial countries.

Something less than a third of the FILP is handled by several corporations or banks that are empowered to lend directly to what would be customarily considered private business sectors. Their lending mandates run principally to small business and to agricultural, forestry, and fishery enterprises. The exceptions are the Export-Import Bank and the Japan Development Bank.

Like its American counterpart, the Ex-Im Bank helps to finance big-ticket exports. (This financing, incidentally, is the only important remaining export subsidy.) As in the United States, the Japanese Ex-Im has had one major customer, in its case the shipbuilding industry rather than the aircraft industry. It seems right to say that the Ex-Im Bank serves an industrial policy purpose. But it would not be right to call it distinctive, for all of Japan's major competitors have a similar lending institution.

The industrial policy literature tends to single out the Japan Development Bank as the central instrument of industrial policy. The JDB has had as its mission "to promote industrial development and economic and social progress." Its lending program in fiscal 1981, representing new authority and repayments of old loans, was 1.0 trillion yen, or about $5.1 billion. Many commentators assert that its loans have a multiplier effect because the evidence of governmental interest tells private bankers that a JDB borrower should be given preferential treatment. (Why this should be true in present-day Japan is not altogether clear.) Unlike the small business lending institutions, which actually are far more generously endowed, its customers in principle are to be found in the big business and prospectively high growth sectors.

Examination of the lending program makes for some doubt about the JDB's role in industrial policy. Of the $5 billion scheduled to be disbursed in 1981, $2 billion was earmarked for energy projects. About $700 million was to be allocated to urban development--private railroads, modernization of distribution facilities, and urban renewal. Regional development lending was set at $760 million. Quality of life loans--pollution prevention, safety measures, food supply, city gas--were to be $560 million. The merchant marine industry, a perennial claimant for IDB assistance, was to get $550 million.

These parts of the program--about 88 percent of the whole--have to do, basically, with economic infrastructure. It may make the best of sense to nurture private infrastructure projects with public loans at interest rates somewhat below commercial rates, although an argument can be made that the Japanese flag merchant marine at least is more a burden than a boon for the national economy. But to find in these JDB operations a highly focussed form of industrial policy is simply not possible.

Of the remainder of the $5.1 billion, the 1981 program proposed loans of $475 million for the "development of technology"--that is, computers, the electronic and machinery industries, and R&D. These loans, and perhaps the $145 million of "other" lending, may fit well with the conception of a national policy aimed at the economic future. But the total of $620 million, in a country where private plant and equipment investment was running (1981) at something like $180 billion, does not look to be a decisive force for shaping that future.

Protection. Throughout the 1950s and 19760s Japan's import policy can be characterized as protectionist. It was protectionist for infant industries and more established industries alike. Because foreign exchange control was the principal instrument, and the balance of payments the rationalization, import restrictions even extended to many goods not produced in Japan at all.

This wholesale protectionism was a factor in the growth and diversification of Japan's economy in those decades. Whether it was all necessary or always well calculated is open to question, but it was in any case the fact.

After the liberalization of the 1970s Japan now stands as a country with generally low tariffs, processed foods and certain semi-manufactures aside, and relatively few other official barriers to imports, agricultural goods excepted. Formal, official protection, in other words, cannot be said to be a significant feature of industrial policy.

It is often alleged that the private sector itself runs a protectionist regime through informal buy-Japanese or buy-only-within-the-industrial-group practices. The extent to which this allegation is accurate cannot readily be established. If private protectionism is indeed widespread and the sums involved substantial, then Japanese business must willingly be passing up important potential gains from international trade. This does not seem consistent with the abundant evidence of vigorous inter-firm competition in Japan. And if industrial policy relies in important measure on a self-defeating practice (so far as profit maximization is concerned) then perhaps the policy's merits will need to be reconsidered.

Competition policy. It is certainly true that Japan does not have a Sherman Act tradition. The Fair Trade Commission, a pro-competition inheritance from the postwar occupation, has survived and in recent years been strengthened somewhat, but the general thrust of official thought in Japan has been toward worry about "excessive" competition and toward a possibly exaggerated faith in economies of scale. Thus industry laws and government policy have emphasized ways to limit competition and to foster bigness. What we have learned recently about official measures to organize cooperative R&D in semiconductors comes within this intellectual and policy framework.

To be sure, much of the drive to restrict competitive excesses has been directed at sectors like textiles, where entry is easy and small firms come and go with great frequency. The record suggests that the policy has been less than fully effective. Small firms are as numerous as ever in, for example, the clothing industry, which has long engaged the attention of MITI's textile bureau. A sizable official effort in the automobile parts industry during the late 1950s and early 1960s may have had greater success; but here the major auto producers must have had an important role as they went about developing reliable supplier relationships.

The machine tool industry, also a target for nationalization programs, appears still to be one of relatively small firms whose competitive positions are subject to rapid change.

In a few industries, particularly shipbuilding and petroleum refining, investment decisions have had to be formally approved by government authorities. In others, such as steel, the government has sometimes intervened to defer capacity expansion projects. Price

leadership in steel has been allowed and in fact fostered by the official establishment. Cartels to manage export restraints have been frequent, as have so-called recession cartels.

Nonetheless, the government's competitive policy writ does not run without limit. In the 1960s MITI made a famous bid for broad powers to guide and rationalize designated industries, beginning with autos, specialty steel, and petrochemicals. The auto industry, MITI officials believed at the time, could best be organized into only two groups centered around Nissan and Toyota. This proposal attracted much business, bureaucratic, and political opposition. Eventually it was abandoned. More generally, it seems clear, Japanese business and industry have been able to evade or ignore many of the rules, restrictions, and guidances that it has found unhelpful. Much of Japanese economic life is visibly rivalrous, not only in the small firm sectors but also in autos, electronics, and other industries where big companies dominate.

Currently, the MITI version of competition policy is being applied, in modified ways, to a group of "depressed" industries which include aluminum and certain petrochemicals and chemical fertilizers. These are mostly industries which have been hurt by high energy prices and which stand in need of more or less severe capacity reductions, or so it is agreed. Legislation enacted in 1978 and revised and renewed this year gives the government ministries, in most cases MITI, authority to guide and induce the necessary adjustments. The usual formula is to get agreement on scrapping of capacity under some form of fair shares arrangement and then to promote various kinds of joint action in the way of production, marketing, or raw material

procurement.

This is truly a version of an industrial policy: the government steps in to help organize a process of orderly disinvestment when an industry is judged to require downward adjustment. Whether this will prove to be more economic than a policy of leaving everything to market forces is open to question. The worst-case aluminum industry has already shut down more than two-thirds of its 1978 capacity and is still shrinking; a less intrusive MITI policy might have seen the reduction accomplished even more quickly, to the general benefit. But the actual approach probably conforms to prevailing Japanese views, and is not plainly wrong-headed.

All in all, it is difficult to find in Japanese competition or anti-competition policies anything fitting within an overall industrial policy. Some sectors of industry and business are populated mainly by small firms, where atomistic competition to some extent prevails. Others are in varying degrees oligopolistic, in some cases with governmental blessing and support. There is certainly no standard pattern, designed by central authority.

Plans and visions. An industrial policy would seem to call for a plan or blueprint to provide guides for day-to-day and month-to-month implementation. These are not evident in Japan.

Every now and then, usually after a new prime minister takes office, the Economic Planning Agency and its advisory body prepares a multi-year Economic & Social Plan. "Plan," however, is a misnomer. These documents resemble rather our President's annual Economic Report to the Congress. They discuss trends and problems, economy-wide and in some cases sectoral, and suggest broad courses of action, often heavily

qualified (because a number of ministries have a hand in the preparation). To draw the particulars of a focussed industrial policy out of the Plan would require an enormous amount of freehand exegesis.

MITI and its senior advisory council also prepare a plan, or "vision," which is nominally more narrowly confined to the industrial part of the economy. In fact, past visions have been very discursive statements, ranging over many subjects not all of them strictly within MITI's purview, the exchange rate for instance. But they do provide a check list of specific technologies and products that are believed to hold out promise for the future. Government interest in these is justified very much as the OMB explains federal support for R&D--that the private sector may lack incentive to invest adequately on its own.

That certain technologies receive mention in the visions does not mean that their commercialization is assured. Or if it does, then Japan infallibly will achieve nuclear fusion on a commercial basis in some finite period. The London Economist has said that the futuristic technologies cited in the visions are mostly "platitudes." This may be too deprecatory a term, but it is certainly no further from fact than the notion that inclusion in the MITI list is equivalent to a guarantee of successful development.

Concluding comments. As a nation, Japan clearly has done many things right. The recovery from wartime devastation and disruption and the subsequent record of economic growth were impressive achievements by any standard. No single source or cause explains these accomplishments. Government was one of the contributing factors, but only one among many. And its principal contribution arguably was in prudent macroeconomic policy making (with one major lapse in 1972-1974)

rather than in the detailed interventions that are now supposed to amount to a closely articulated industrial policy.

The belief that the government supports the winners—and discards the losers—is in conflict with reality and, for that matter, with commonsense. One of the chosen industries is the aircraft industry. It has been the object of special promotional legislation and close bureaucratic guidance and nurturing since 1954. It is still a small industry, overwhelmingly dependent on a single captive customer, the Japan Defense Agency. One of the laggard sectors is clothing. Per capita value added in this industry is the lowest in all manufacturing. During the 1970s, when total employment in manufacturing declined, employment in the clothing industry increased.

Automobiles represent one of Japan's spectacular industrial successes. An industry that produced 165,000 inelegant and high cost cars in 1960 is now the world's leading producer and, as is well known, the leading exporter. Its biggest export market, to state the obvious, is the United States, where mass production of autos was invented. Some of the public comment about this phenomenon could be taken to suggest that it was planned and "targeted" by some extraordinary prescient people a couple of decades ago.

Prescience in the automobile instance would have required a prevision of the oil crisis of 1973-74, for it was this event that led to the surge of Japanese exports to the United States. From the late 1960s to 1975, Japanese exports had been increasing, but almost entirely at the expense of European suppliers. It was only after the gasoline shortages and higher gasoline prices that the Toyotas, Datsuns, and the rest began to take the market share away from Detroit.

To believe that anyone anywhere foresaw all this is to believe anything.

In short, happenstance as well as good quality, good marketing, and competitive prices had its part in this Japanese miracle, as it had in the larger economic growth miracle. MITI and other ministries of government played parts also and it would be pointless to argue that these were irrelevant or negative. It is equally wrong, however, to attribute to MITI and to something labelled industrial policy the principal credit for accomplishments that were the product of complex and shifting combinations of forces and events. Above all, it is wrong to assume that Japan's mix of policies, which on inspection proves not to be a coherent whole anyway, has some valid application to our own, made in America problems.

Representative LUNGREN. Thank you, Mr. Trezise. I was just mentioning to the other members that you had to leave a little early. I'm going to have us each take 5 minutes so we'll all get a chance to at least question him, if you wish to, as well as the other panelists.

Mr. Trezise, and then the other panelists, I hope, will comment on this as well—a recent study by Paine-Webber commented that:

> Japan's international competitive strength in semi-conductors is not the result of lower wages, higher productivity, automation, government R&D spending, quality levels or interest levels. It is, instead, the result of fundamental differences in the structures of the Japanese and U.S. economies.

I wonder if you might comment on that and comment on the distinctions between the two countries, particularly, perhaps, the differences in the cost of capital.

Mr. TREZISE. Well, Japan—taking the last point first—is at the present time a high saving country. We are not. Interest rates in Japan are relatively low. They're not that much lower, but they are lower than real interest rates here. The cost of capital, of course, is a relevant question. We have had now for a longer period than one likes to remember high real interest rates which have, of course, served a purpose in bringing down our unacceptably high rate of inflation, but it's an open question whether we're going to generate the kind of business investment in plant and equipment that is needed for the rest of the century with the present level of rates. Japan is much better suited, better fitted, on that score.

So, surely, there is a difference.

The question about semiconductors is a very complicated one. I know nothing about semiconductors, per se. I would agree with your source that the success was certainly not ascribable, as many people would have it, uniquely to the Government-sponsored R&D program in semiconductors.

Representative LUNGREN. Mr. Patrick.

Mr. PATRICK. I think that the cost of capital argument is overrated. Part of the reason for the success is the limited nature of Japanese success. The American semiconductor industry is also successful. We still produce more than anybody else and we produce competitively a wider variety of types of semiconductors. Part of that is because of the innovative quality of American small business, our venture capital market, the way we spin off.

The strength of the Japanese industrial success in semiconductors, in part, is because there are a relatively small number of relatively large firms that dominate that industry in Japan and they have had internal capital and an internal market, so that they have gone for the mass production items and thereby generated economies of scale and technological efficiency.

So part of it is a difference in industrial structure. Japanese firms certainly have come up and done a very fine job in semiconductors. But certainly they are not going to have the whole semiconductor market. They are going to be very competitive in certain market segments. American firms are going to have other market segments. And one might argue that our venture capital system shows its strength precisely in the semiconductor industry, and the Japanese weakness.

Representative LUNGREN. Mr. Adams.

Mr. ADAMS. Well, I would certainly agree entirely with what Professor Patrick has just said. On the subject of the semiconductors in the future, it's really, quite frankly, much too early to say how the Japanese industrial policy or, for that matter, Japanese industry in general, will go. People who have examined these kinds of questions—John Zysman from the University of California, for instance—have been concerned about the kind of progress that the Japanese industry is making in the semiconductor industry and, very specifically, about the quite massive support which is being provided through public sector research contracts of various kinds.

One of the aims is, clearly, one of developing high technology and, in some sense, trying to leapfrog other countries. Now it's already been said here, that's an enormous challenge and it's a challenge which is quite different from the challenges that Japanese industrial policy had during the 1950's and 1960's and early 1970's. And we have to be concerned. We have to ask what is the public sector resource and private sector resource that's going into this development of this new technology. We have to ask, how can we best work with them? Many American industries and firms are already thinking in those terms.

But it would not be realistic to reach a conclusion today about whether that policy has or will be successful.

Representative LUNGREN. Mr. Tanaka.

Mr. TANAKA. With regard to costs in Japanese industries, 75 to 80 percent consists of loan capital. So even if capital cost is 6 percent, the aggregate interest cost to the company is fairly substantial.

With respect to capital costs in this country, specifically with respect to semiconductors, I don't think that capital costs have been a constraining factor in the development of the semiconductor industry in the United States. As I previously stated, there has been sufficient venture capital money so that it was the venture capitalists that really served as the nucleus in the development of the nonintegrated semiconductor producers centered in Silicon Valley.

The problem, the competitive problem arises from the fact that some of these companies became large and desired to take less risks.

So when the 16K RAM market came along in 1978 and 1979, since the U.S. semiconductor manufacturers had not invested capital in the new generation of equipment for the manufacture of 16K's, they were caught short in 1978 and 1979 when a substantial 16K market emerged.

So, therefore, companies like Intel, National Semi-Conductor, and so on, purchased 16K RAM's from their Japanese competitors to satisfy the demand from their customers.

In the fall of 1981 and 1982, again, because the domestic producers had failed to invest back in 1978 and 1979—and 1979, you will recall, was a recession year. You recall that 1975 and 1976 was also a recession year—that these manufacturers did not invest sufficient capital in the manufacture of the 64K RAM.

So that when the market emerged, there were very few domestic producers who were in the merchant market with a capability to mass produce 64K RAM. Hence, the Japanese are claiming to have taken over 70 percent of the market.

Currently, there is a supply shortage of these 64K RAM's because of the growth of the personal computer market and because of the growth of computers for commercial and industrial applications.

National Semi-Conductor, Intel, and so on, have again put their customers on allocation. And this is what accounts for the 70-percent increase in the first quarter imports from Japan of semiconductors.

It's noteworthy that during the first quarter of this year, semiconductor production in the United States increased by sixfold over the same period last year. So you can see if U.S. production increases sixfold during the first quarter of this year, and U.S. customers of U.S. manufacturers are on allocation, that there clearly is a shortage and this is not due to the shortage of capital, but a failure to make timely investments anticipating future markets.

Representative LUNGREN. Congressman Scheuer.

Representative SCHEUER. Thank you, Mr. Trezise, you spent a good deal of your testimony telling us that Japan does not have an industrial policy, and so forth. What government actions in Japan, if any, do you think are responsible for the remarkable success that Japan has had in leaping into a position of extraordinary superiority in global commerce in many of these high-tech items, electronics? And considering the differences in culture, labor organizations, business, government, the roles of each and the interrelations between each, what can we distill from their experience that would be beneficial and useful for us?

Mr. TREZISE. Well, implicit in your question, Mr. Congressman, is the suggestion that Japan emerged after the war and somehow became a full blown industrial country. But, of course, Japan was a big industrial country to begin with. The war lasted for 4 years. They didn't do that out of a peasant agriculture. It was, by the standards of the 1930's, a respectable industrial power.

So the development postwar was built on something substantial; that is, in terms of not only a certain amount of capital plant remaining, but good managers and technicians and skilled workers and so on. But, more specifically, I would say that what the government provided, as Professor Patrick suggests, primarily was rather successful macroeconomic aggregate demand policy. This was partly good management; partly good luck. I don't think one should attribute to Japanese bureaucrats skills that nobody possesses. But they did rather well and took advantage of the possibilities before them.

I would say that that was overwhelmingly the most important thing that government did and I think that probably holds true for all government.

Beyond that, one might argue, I think with some force, that the policy of subsidizing agriculture, subsidizing the rice sector, was probably a sensible thing to do. In economic terms, it's foolish—I mean, paying six or seven times the world price for rice, a cost-of-living commodity.

On the other hand——

Representative SCHEUER. A great deal more for citrus fruit, for meat.

Mr. TREZISE. Right, everything. In fact, the whole agricultural policy is, in many respects, insane. But keeping a core of people in

agriculture I think drew off, prevented social tension that rapid growth might otherwise have caused. The agricultural sector declined very rapidly, of course, and rural populations moved to urban areas. But it was done sufficiently gradually so that the underlying social harmony of the country was not disturbed.

I think this is perhaps an example of government doing wrong things for the right reason.

Representative SCHEUER. I'll repeat the second part of my question. What can we distill out of their experience that we could apply, taking into account there are vast differences in the way we organize ourselves, governmentally and businesswise and laborwise and, of course, vast cultural differences, too, which are summed up in a very interesting article in today's New York Times on Japanese education which I commend to all of you.

What can we distill from the Japanese experience that's relevant to us?

Mr. TREZISE. Well, I guess you're pressing me hard for an answer and I guess I would single out at the present time, the success the Japanese Government and the Japanese community has had since 1974 in restraining the growth, the increase in wage levels more or less within the limits set by the growth of productivity. It's been quite remarkable because in the big inflation of 1973–74, they paid off the wage earners with a 30-percent wage increase in 1 year, a catch-up, at a time when the country was suffering from a severe—the worst inflation of any industrial country. They make mistakes, in other words. They didn't come out of this scot-free.

But since then, the wage settlements have gradually been shaded down and now I think it's fair to say that year in and year out the wage settlements are within bounds of productivity growth and I think there has been a crucial factor in keeping the price level under control.

That's a lesson we could learn. I don't know that we have the institutions or the arrangements that would permit us to do it. We don't have the same kind of wage settlements, for one thing. They tend to have a single settlement for much of industry that is a one-time affair in the spring. We don't do that.

But, still and all, if there's anything that could help us out of our present travail, it would be assurance that wages and productivity would rise more or less in tandem.

Representative SCHEUER. Thank you.

Representative LUNGREN. Congresswoman Holt.

Representative HOLT. Thank you. Following along that same line, Japan has one of the lowest unemployment rates. I think it's rising now to maybe 3 percent in the recent recession. How do they account for that? Do you count it differently than we do or what's the difference? Also, what do they do for training and retraining? How do they put people into the successful industries?

Mr. TREZISE. The unemployment figures are compiled not greatly differently from the way we do them. The technicians in this field tell me that the Japanese sampling system is such as to understate the true level of unemployment by some amount. The present figure, which is pushing toward 3 percent, as you say, might more properly

be 4 percent, but for these technical factors. But I say this with a good deal of humility because I really don't know anything about the unemployment statistics-gathering techniques.

As for training and retraining, that is primarily a private sector matter. But the Government has, or did during the recession, provided special funds to keep people at work, really. But the people kept at work in many cases were given retraining or given training opportunities which it is said helped Japan to make some of the adjustments they had to make after the oil crisis when some of the big industries, notably shipbuilding, were badly hit.

Once again, though, I should make clear that you're getting into fields in which I have no claim to expertise.

Representative HOLT. Do any of the rest of you have any comments on the relationship to that unemployment crisis, the way they handle it, to the whole industrial policy?

Mr. PATRICK. I would like to respond. I think that the way Japan handles its unemployment and employment is social, not statistical, in its difference between the United States and Japan.

If you look at the total numbers of hours worked in Japan over the last decade, the pattern follows the United States very closely. A big dip in the number of hours worked in the recession of the mid-seventies and again recently. But it hasn't corresponded with a lot of reported unemployment. That's because the Japanese employment system works in such a way that the marginal workers are not young people or new entrants who were laid off, but middle age women and old people who were laid off. And when old people are laid off, they are, so-called, retired and they, therefore, don't enter the employment statistics.

Similarly, middle age women—married women that is, since most middle age women are married in Japan—are not eligible for unemployment compensation. They simply go home and they, therefore, move out of the labor force.

The interesting statistic in Japan is that there is a large reservoir of people, women in particular, who would like to work, who don't have jobs, but who are not classified as unemployed. The benefit from Japanese society's point of view is that young people are employed, are learning job skills, and are building careers. And it is a sort of societal decision that has evolved; I wouldn't say it was a conscious decision. This is the way their employment system works in contrast to ours.

Representative HOLT. Isn't that the management policy to handle it that way, not government policy?

Mr. PATRICK. It is management's policy, predominantly. It has to do with employment relationships in which women are considered not as permanent workers, but easy to lay off, easy to rehire on a temporary basis, and that sort of thing. And similarly for older people. Japanese retirement practices are very different from ours. People formally retire at between 55 and 60. Nobody can afford to retire at that age. Most people don't want to retire. So they go to second, lower pay, or jobs with no job security.

So it's those two groups that get hit particularly hard.

Representative HOLT. Does anybody else have a comment on that?

Mr. TANAKA. Congresswoman Holt, I'd like to address that issue. I think, fundamentally, I would agree with Professor Patrick that their

unemployment rate, if reckoned in terms of like criteria, probably would be higher. But there are, I think, institutional dynamics which are operative here which tends to reduce the level of unemployment. The first is the idea in Japanese management that they are managers of people rather than managers of assets. I think in this country, managers tend to be managers of assets rather than managers of people, because we have a fundamentally different type of labor market. We have what I would describe as an external labor market, where the prospective employer goes out into the open market and finds people with proper skills to hire to fill the open slots.

In Japan, as I perceive it, Japan has what I would describe as an internal labor market, wherein the labor market is coexistent with the number of employees in each corporation. Why? Because Japanese companies recruit people out of high schools, directly out of high schools, for the factory and directly out of college for white-collar jobs. So that there's very little lateral integration of people and virtually no labor market, in our sense of the term.

At that point, once a worker is employed by a first-tier company, for example, Hitachi, Mitsubishi, and so on and so forth, he has lifetime tenure. The company is interested in keeping that employee until official retirement age of 55, and now it's going up to 60, I believe.

So there is a responsibility encumbent upon the employer to constantly retrain that worker and to keep him gainfully employed in a useful manner within the company.

Representative HOLT. Well, what happens, as Mr. Trezise says, in, say, the shipbuilding industry, where the industry is dying. They are not producing. How do they keep those employees?

Mr. TANAKA. Yes. In that case, for example, the shipbuilding industry, what was done was, for example, the shipbuilders would go to Toyota or a manufacturer in a growing industry and ask them to take on these workers until they can find other jobs for overtime work and so on. This is frequently done in Japan, where a dying industry, with surplus labor, basically consisting of structurally unemployed, are taken on by the steel companies, by the electronics companies, by the automotive companies, as temporary hires and sometimes incorporated as permanent employees.

So that the companies—in other words, it's the private sector, basically, through volunteerism or otherwise, that tends to pick up these workers and tries to reemploy them.

Representative HOLT. Is there government encouragement to Toyota to retrain those people?

Mr. TANAKA. No. No, because for all Japanese companies, one of their fundamental obligations to their employees is to keep them trained so that they are economically productive.

Mr. PATRICK. I think there is an important point regarding retraining. Since the companies feel a commitment to the worker to age 55 or 60 and if the worker tries to leave he can only get a much lower paying job, so that each is locked into the other. Under those circumstances, it really makes sense for management to spend money to train the worker because you know that you're going to have him.

In our institutional arrangements, it makes less sense for a company to train and retrain middle age workers because there's no assurance

that the person won't quit and go to another company at a higher wage. In Japan, that simply cannot occur, except for a very few skills.

And so the company has a greater sense that it will get the pay-off of retraining these workers.

Representative HOLT. Thank you.

Representative LUNGREN. If I hear the panelists correctly, you seem to suggest that Japanese industrial policy, whatever that means, was more intensive and perhaps more effective in the immediate postwar period and that it is now not as either intensive or effective and that that largely is derived from the fact that they have gone to a more mature economy.

Is that a fair crystalization of what you said? That being the case, would it suggest that we would be moving in the wrong direction to try and adopt what Japan did in the immediate postwar period when it was attempting to follow the United States and become again a re-established industrial power and that, in fact, we find ourselves in a different situation where we're not following any sort of lead, that we have to play the game by rules that we are creating as we find them?

Mr. Tanaka.

Mr. TANAKA. Yes; during the early part of the occupation, obviously, I think it was about 1947, under the situation of economic constraints in terms of materials, materials supplied, energy sources and so on, with the approval of the supreme commander of the allied powers staff, a resource allocation system was instituted with industries targeted, priority industries targeted, and so on. As long as Japan was playing catchup ball, Japan can look to the United States and the European countries for role models and point its governmental industrial policy in the right direction.

Now that Japan has achieved pretty close to parity in terms of various areas, that it is now placed in the same position that we are placed; namely, looking for the unknown and moving from there.

And so, fundamentally, in that situation, probably the people who would be most aware of which direction a company or an industry should be moving are the industrial—the business managers who would have superior knowledge as to technological developments.

And so I think that the driving force must continue to be—the driving force in Japan has been and is competition, intense competition within the private sector. And I think this is what is going to drive the United States, certainly, to higher technological heights, as well as in the case of Japan.

Mr. ADAMS. Yes; well, I certainly would like to say that you're quite right, Congressman Lungren, in interpreting the panel's view that industrial policy in Japan today is different than industrial policy was earlier in the post-war period when, as Mr. Tanaka points out, Japan was playing catchup ball.

I must say, however, that they played it rather effectively. I am not willing to simply disregard and say, well, it had nothing to do with policy. I don't know that policy was the central element. But I think in playing that catchup ball, as they went along, they had a pretty good idea of what they were doing and they made some mistakes on the way, indeed. But the policy, surely, and its implementation surely made a difference.

Now I'd be the first to say that the task today is very different.

We can then turn and talk about the United States. I think point number one is that, to some extent, it's sad to say that we are now playing catchup ball. And we will be playing catchup ball a good bit longer if we don't start thinking about where we are going. It may well be that once we have sat down and thought about where we're going, that we will recognize that what Mr. Patrick has called macro-industrial policies will be more useful to us than microindustrial policies. I tend to support that, by and large. Not exclusively, but I think by and large we may very well find macro policies easier to handle in the United States.

On the other hand, there are clearly areas where macro policies won't do the trick. It isn't just the high tech; it's the whole question of what do we do? Shouldn't we help our steel industry? Should we simply allow it to go down the drain? Or should we find the incentives and ways in which the steel industry, or that part of it which will be viable, can be effectively rebuilt?

Will that happen by simply allowing the market forces to operate or is there room here and need for an industrial policy?

So, I think I would not say because the world is different, we can step away from this. I think, on the contrary, the situation of the U.S. economy is such at the present time that some forms of industrial policy are needed if we're going to maintain and, indeed, develop competitiveness in the world economy.

Representative LUNGREN. Mr. Trezise, I know you have to leave.

Mr. TREZISE. Congressman Lungren, there may be some version of industrial policy that would be helpful to us. I don't know exactly what it is and I must confess that what I've read about, it seems to me that it would be saying, well, let's get labor, business, and government together and we'll sit down and talk and somehow we'll come up with answers.

I'm very doubtful that that process is going to get you very far.

I might offer an anecdote. When I was a bureaucrat myself in the first Nixon administration, somebody in the White House got the idea that we really ought to look at where we were going, what industries should the Government really look forward to and perhaps give some special blessing to for the future.

A committee was set up, an interagency committee, under a fellow from Lockheed who was temporarily in the Government. And they met and talked for months on end and they wound up with a report. And the first industry that they proposed we should nurture and help was the nuclear industry. After all that effort—well, we already had a nuclear energy industry. We had been nurturing it for two decades. But that was the best they could come up with.

Frankly, I'm a skeptic about this kind of an approach.

Representative LUNGREN. I sort of got that idea. [Laughter.]

Mr. PATRICK. I think there are certain things that we can learn from Japan and if we want to call that industrial policy, that's fine. This is in part a response to Congressman Scheuer as well.

One of our problems is that in economic policy, public and private, our mindset is excessively short run. One of the virtues of the Japanese system, even the MITI visions, which, I grant, are rather vague and

discursive, it does focus attention on longer run issues. It gets people thinking in a longer term sense as to where the economy is going. And I think that that is terribly important. We don't tend to do that very much in public policy. I very much agree with Professor Adams on that.

I guess what I learned from the Japanese experience that is relevant for us is that you have to concentrate on the fundamentals. If you want to improve the productive capacity in this country, you have to look at the things that go into that—labor, capital, and technology. I think we can do more and better on R&D.

Our educational system clearly is not as good as Japan's up through secondary school. We aren't going to emulate or copy their educational system. It has its own problems, as the articles in the New York Times suggest. But it clearly turns out people who, in terms of economic performance are better trained and are better qualified to be retrained for the sorts of industrial needs of a high-tech society.

There are incentives to savings and investment that are clearly important. One of the most profound differences between the United States and Japan is that the Japanese save a lot and we don't. Now we don't really know exactly why that's the case. My own feeling is that government policy has only a marginal impact. It has much more to do with Japanese anxieties about the future, about the fact that they're living longer and don't know who's going to take care of them, and so forth.

But be that as it may, the fact that they save three times as much out of their income as we do provides a tremendous savings pool for the economy to use productively.

But we can, at the margin, provide additional incentives to save, additional incentives to invest. And I think we have, and I think as the economy picks up, we'll see those working better. We might want to consider more.

In terms of industry-specific policies, it seems to me in the high tech area our industries are doing pretty well. I don't think that there are many industries in which Japan has global superiority in high tech in terms of technology. And the ones that we notice, consumer electronics—video tape recorders and that sort of thing—developed despite the Japanese Government. The Japanese Government paid no attention to that industry, didn't help it at all. It was really a bunch of dynamic entrepreneurs, the changing technology, new young entrants into the industrial structure and so forth.

Every industry has problems, but it's not clear to me that our semiconductor industry, our computer industry, our telecommunications industries are fundamentally weak. Rather, they are fundamentally the strongest in the world. Our problem is, as Professor Adams suggested, the industries that are in trouble, and they are important. Steel is the best example. Obviously, we've got to deal with steel. We've got to address these issues.

I think we can have a better policy than we do now toward the steel industry. We have a very ad hoc, unclear kind of policy—sort of, oh, well, give them some import help—that is not long run, it's not structural, it does not have performance requirements.

The Japanese focus on industries that are in trouble may be the area from which we can learn a great deal.

Representative SCHEUER. Let me ask you about the steel industry. We talk a lot about market forces. Well, market forces were effective in this country ever since World War II, and during that period, the entire steel industry disinvested, almost every year during that period. They put virtually nothing into research and development. They put virtually nothing into new plant and equipment. United States Steel a few years ago bought a big oil company, Marathon Oil, but they didn't invest in steel. They invested in conglomerate activities around the globe. They did not put their cash flow into steel.

Now they come to Congress. They are saying to us that the competition is killing us. The Japanese and the West Germans and the Swedes can deliver a freight car load of steel on a railroad flatcar in Pittsburgh cheaper than we can put it on a railroad car in Pittsburgh. Isn't that terrible?

Well, the answer is if you guys had kept your plants modern and had put your cash flow where it belongs, in your own business, instead of getting adventurous in international, exotic enterprises, maybe you'd be competitive today. But now they want to be wrapped in a cacoon and protected from the global competitive efforts that they should have expected all along. Now they want us to soak the American consumer, the automobile manufacturers and all the other manufacturers, of billions, and billions, and billions of dollars to protect them from their own stupidity and cupidity.

So market forces didn't work very well in those circumstances. What should our Government policy be now to these decisionmakers in the steel industry who now come to us for help when, it seems to me, they're in a dilemma of their own design and execution?

I don't want to be harsh about it—[laughter] you could repeat almost the same dialog about the automobile industry. Now we have a domestic content proposal before us that's going to cost the American consumer again billions of dollars. Why?

If you look at the productivity of the Japanese and the German and the Swedish automobile worker, they produce a car with about half of the hours of labor; yet, our automobile workers get paid about twice as much.

So we have a domestic content bill to protect both our automobile labor and our automobile industry from the results of their own wrong decisionmaking, to put it at its most charitable?

What's the answer? I mean, what do we do as Congressmen? How do we get ourselves out of this dilemma?

Mr. ADAMS. I think one can say what you ought not to be doing. But first of all, let me make the following comment. It's tough to be in the steel business. It was tough to be in the steel business because they're producing a commodity and other countries built up steel industries often, indeed, with public support. And it's a very competitive field. Profit margins were low. Profitability didn't look good. They used up their plants. There were real financial reasons that they put their money elsewhere because more profits could be made.

Indeed, I think the emphasis on short-term performance is a damaging thing, but I'm not sure that I would say, well, we should or

should not do something for the steel industry today because they were bad boys in the past.

I would start with a clean slate and say, what can we expect of them? Maybe we should say, first of all, what should we expect of them? How much of a steel industry do we really need? How much of a steel industry really could be competitive if we have it in the United States? Then I think we need to ask ourselves, can we achieve that kind of objective by simply allowing market forces to operate?

To some extent, we can. I mean, some changes are already occurring.

Can we provide additional incentives and additional help either in the form of protection or in the form of preferential capital flows or tax benefits?

Certainly, we should not be providing help if the end result is not going to be a viable competitive industry. That says, really, two things. It says, on the one hand, any help that we provide, import protection or other, should be temporary. And ideally, it should be linked to performance requirements on the part of the industry.

So there's clearly a need to think ahead and formulate policies that will get the industry around to accomplishing what we would like it to accomplish.

Representative SCHEUER. Mr. Tanaka.

Mr. TANAKA. Yes; Congressman. It seems to me, here, again, I think that one should look at the declining steel industry in terms of not an industry, as such, nor as constituting the fixed assets of the industry, but as people, the workers, the managerial class and so on.

If you look at and focus on this issue from a people-management standpoint, then the answer, I think, is very clear. The answer is to find jobs for these workers, to upgrade their skill levels so that they can find work. And, therefore, I think that the economy should focus on retraining programs, such as instituting another GI bill of rights approach where the worker can elect to educate himself in an area of his choice, so that he will gain the skills which will enable him to be gainfully employed.

Representative LUNGREN. We're going to have to go for a vote, but I do want to ask just one question. We have talked all day about the Japanese experience and how it might relate to us and we have kind of downplayed any hint of protectionism. I join Congressman Scheuer in being very skeptical—in fact, fighting against domestic content and many of those other things. But I think unless we acknowledge that there has been some, we don't gain the credibility in order to fight a protectionist measure that may be ill suited to us.

It seems to me from what all of you have said in your testimony, that there was more protectionism, at least you characterized it, in Japan during the postwar period, than there is now. Yet, I assume that you all say there is some now.

Are there any experiences from the Japanese in which they were harmed by their protectionism? I'm one who believes in free trade and fair trade and so forth because I think, ultimately, it's very, very corrosive to the total international economic situation. But has it been totally a risk-free production or utilization of protectionism by the Japanese up to this time?

Representative SCHEUER. For example, in the agricultural sector.

Mr. PATRICK. Well, I was going to say, obviously, there are some very important sectors which are inefficient in Japan, in which there are far too many resources. And the reason they're still there is, in substantial part, because of protectionist policies. Agriculture is a big example, and it's huge.

Representative SCHEUER. We're very much affected by it in California.

Mr. PATRICK. And a number of other States are affected by it too. Japan is also our largest market for agricultural products. They are holding level on agricultural production, and all the increase in demand is being met by imports.

So there's some longer run hope on that one.

But, clearly, that's one area of inefficiency. They still have fairly high tariffs on some simple textiles. We don't benefit from that particularly directly, but developing countries that are in textiles would and we would benefit from selling more to those developing countries if they could sell more to Japan.

In the services—finance, insurance, other service areas—it has been a very protective environment: Less competitive, higher cost to Japanese consumers. That's another area in which, clearly, trade expansion as a policy should be pushed. I think the recent efforts to expand the GATT-type discussions to services as well as physical products was a really good idea and should be pushed.

Now, Japan is an advanced industrial nation. It doesn't make economic sense, or political sense, for it to continue its protectionist policies in terms of the broader international political as well as economic arena. But they live with domestic political realities just as we do. That's their dilemma, how to try to reallocate these resources in a more efficient way given the political constraints they are under. I think that the basic thrust, in a longrun sense, is to do that.

Representative SCHEUER. They might tell us the same thing about our own agricultural subsidies.

Representative LUNGREN. Mr. Tanaka.

Mr. TANAKA. Yes. Japanese protectionism has hurt overall the Japanese economy in this sense. An OECD publication published in 1974 indicates that there are over 100 export cartels designed to restrain exports, either in terms of price or quantity, and so on. These restraints on exports were imposed by pressure from the importing countries, as a result of, in large part as a result of Japanese protectionism, that countries involved have complained about Japanese protectionism.

So, overall, it has hurt the total economy. The consumer has to pay four or five times as much for rice which it could obtain very cheaply as a result of agricultural protectionism.

Representative LUNGREN. I'd like to thank all of you for attending. We certainly appreciate this. This is a tough subject, but it's an interesting one.

Thank you very much. The committee stands in recess.

[Whereupon, at 12:06 p.m., the committee recessed, to reconvene at 10 a.m., Thursday, July 14, 1983.]

INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

THURSDAY, JULY 14, 1983

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to recess, at 10:05 a.m., in room 2168, Rayburn House Office Building, Hon. James H. Scheuer (member of the committee) presiding.

Present: Representative Scheuer.

Also present: Mary E. Eccles and William R. Buechner, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE SCHEUER, PRESIDING

Representative SCHEUER. The hearing will come to order.

Yesterday, the Joint Economic Committee examined the record of Japanese industrial policies in order to get some idea of how industrial policies could contribute to the future growth and global competitiveness of U.S. industries and how we could elicit from those powers elements, structural elements, of it that were appropriate for the United States in view of the differences, the cultural and economic differences, the structural differences and comparable conditions of our labor unions, our industrial establishment, and our government institutions.

Today, we want to do the same thing with the industrial development policies of our States and our local governments. While the Federal Government in the past has concentrated on measures designed to support business and industry on a nonselective basis through measures such as the investment tax credit, small business programs and support for basic research, many State and local governments have been active in developing policies and programs designed to develop and support specific businesses and specific industries. This is exactly what industrial policy advocates are suggesting that we might very well do now on a national scale.

So there are several questions which we want to ask today. First, what can the Federal Government learn from the experiences of State and local industrial development programs across the country?

Second, if the United States does establish a national industrial policy, should the States be recruited and involved to help implement it?

And third, what role should the States play? What function should they play? What should be the limits, what should be the design of their involvement?

Our witnesses this morning are David Rasmussen, who has just completed a massive study of State development programs at the Urban Institute, and Robert Ady, vice president of the Fantus Co. of Chicago, who will evaluate State development programs from a business perspective.

We're delighted to have you here. Your prepared statements will be printed in full in the record. So what we'll do is to ask you to summarize those statements informally in 5 to 10 minutes and then I'm sure we'll have questions for both of you.

So we'll start out with you, Mr. Rasmussen. We welcome you both. We're delighted to have you with us. Please proceed as you wish.

STATEMENT OF DAVID W. RASMUSSEN, PROFESSOR OF ECONOMICS, FLORIDA STATE UNIVERSITY, TALLAHASSEE, FLA.

Mr. RASMUSSEN. Thank you. I am David Rasmussen, professor of economics at Florida State University. Today I'd like to report to you the results of our 3 years' examination of issues relating to Federal industry policy conducted in the urban economic development program of the Urban Institute. The coauthor of my prepared statement, Larry C. Ledebur, serves as director of this economic development program.

Based on our analysis, we believe that an activist industry policy that allocates capital among industries should be discouraged.

Representative SCHEUER. Excuse me. Are you going to read your prepared statement?

Mr. RASMUSSEN. I have a summary of about 10 minutes. Or, if you like, I can just give you the main points very briefly.

Representative SCHEUER. I think it would be more interesting if you just chat with us.

Mr. RASMUSSEN. All right.

Representative SCHEUER. There are not so many of us here that you can't just chat with us informally, if that meets with your approval.

Mr. RASMUSSEN. OK, that would be fine. Although we don't believe that there should be an actual Federal involvement in the allocation of capital, we do believe that the Federal Government should be involved in the stimulation of certain activities that stimulate economic growth. And we have listed several of those. Obviously, stimulating investment in nonresidential private capital, public infrastructure, and human capital investment would be among those.

As an alternative, we believe that a sensible approach to industry policy, if one believes that an industry policy is desirable, is to piggyback, or build on the State experience up to this point.

States administered or, if you would, allocated almost $20 billion of capital, primarily through the industrial revenue bond program, in 1981. This involves a tax expenditure of about in excess of $2 billion, according to the Congressional Budget Office. About $12½ billion of that is for the small issue program, which has no basic public purpose other than to subsidize interest costs of business firms.

This turned out to be, I believe, about 5 percent of gross private domestic investment. So we've got States currently allocating a large amount of capital.

Our results from the Urban Institute's "User Guide To State Industrial Incentives," which will be forthcoming in a month or so, suggests that this is largely untargeted, and thereby, not serving any particular development purpose.

Further, our work suggests that industrial revenue bonds are, in fact, a very inefficient way to subsidize interest for business firms. Almost any direct budget line rather than tax expenditure route turns out to lower the cost to the Government for dollar of benefit received by the firm.

As a consequence, we believe that the first principle of involving States in an industry program should be to eliminate industrial revenue bonds, and second, utilize the State activities that are already there.

However, when you take a look at the level of State activity, it becomes clear that you need Federal funding in order to replace the IRB's. And, what we recommend is a program that would basically be direct budget items for State governments.

In particular, we like the idea of revolving loan funds, which could be built up slowly. That has several desirable properties. One is lower Federal expenditures for several years rather than one big expenditure. And second, you're building up these programs as State capacity increases to handle them.

So we like the idea of Federal funding of State loan funds and loan guarantee programs which are, most importantly, targeted to small firms. We think that capital markets, by and large, work effectively, except that there is substantial evidence that small firms have problems in the capital market. This is a problem because small firms contribute significantly and disproportionately to job creation. Although many of the estimates that float around greatly exaggerate the role of small firms in job creation, nevertheless, they're important.

Representative SCHEUER. Did you, in the course of your studies, examine the success of existing programs of this kind, such as the Small Business Administration direct loan programs?

Mr. RASMUSSEN. No, we have not done an evaluation of the SBA programs. Unfortunately, there are relatively few State programs which do precisely what we recommend and many of them are just starting. The ones that do approximate what we suggest have only begun in the last 2 years or so and really don't have a track record to evaluate very carefully. But we have done no systematic evaluations at this point of the effectiveness of delivery.

Our basic point is that a lot of literature, research literature, suggests, if you will, a market imperfection dealing with small firms in the capital market and we believe that allocating more capital toward small firms, if you will, in a more risk-neutral investment strategy is appropriate and it's really only the Federal Government, or government, that can adequately fill this gap.

The other component of this proposed program we need to touch on is how we justify Federal funding of this.

Representative SCHEUER. Well, you mentioned before that there weren't any Federal programs that did what you recommend doing.

Mr. RASMUSSEN. I'm sorry, I meant no State programs.

Representative SCHEUER. Or State programs. But you didn't tell us what you recommend doing. In other words, presumably, you had some criteria. There are no criteria to the SBA loans except that they have to be small businesses. They can sell ice cream or orange juice or fast foods, or whatever.

Mr. RASMUSSEN. Right. We would recommend that the small firms be targeted, but in noncommercial areas—primarily in industrial activities.

Representative SCHEUER. In noncommercial areas.

Mr. RASMUSSEN. Noncommercial, staying out of retail and most services. Business services would be fine, but we primarily think of small industrial activities as the principal target.

Quite frankly, there is one difficulty with this proposal in that most State programs serve two purposes, or many serve two purposes, one being the revitalization of distressed areas. And when you talk about the revitalization of distressed areas, in some sense, commercial activities—retail establishments and so on—can play a useful role. But to the extent that we want to focus on facilitating economic growth in the country, our competitive position, I think the orientation should be primarily in the industrial area and primarily firms that do not have access to private capital markets.

And to accomplish this, we recommend, as I said, revolving loan funds that the Federal Government would initially fund over a period of years and then basically these funds would be self-sustaining, given careful management by the States.

So this, in a nutshell, is our basic proposition. We don't believe that it is appropriate or possible for States to fund this sort of activity, primarily because State programs, when they fund economic development incentives, subsidize two other entities other than the intended recipient. The first one is neighboring States because of the great interdependence of the American economy. And the second one is the Federal Government because when you lower the costs or contribute to the income of a firm, their Federal tax liability rises and hence, the Federal Government receives some of the moneys that the State really intends for the recipient firm.

So that, in a most brief and sketchy fashion, is our basic recommendation of building what we call a federalist industry policy based on existing State government programs and capacities.

Representative SCHEUER. That completes your testimony?

Mr. RASMUSSEN. Yes, thank you.

[The prepared statement of Mr. Rasmussen follows:]

PREPARED STATEMENT OF DAVID W. RASMUSSEN

TOWARD A FEDERALIST INDUSTRIES POLICY: THE ROLE OF STATE INDUSTRIAL DEVELOPMENT PROGRAMS

Co-authored by

Larry C. Ledebur
Director
Economic Development Program
The Urban Institute

Introduction

Economic stagnation over the last decade has produced a variety of proposals for government action to stimulate economic growth and international competitiveness. In 1980, Business Week (June 30), in a special edition on the Reindustrialization of America argued that:

> industry policy overseas is becoming a contest among advanced countries in which government attempts to pick the winners from potential export industries and push their development as hard as possible. Thus, the lists of target industries that come out of government offices in Paris an Tokyo are solidly packed with high-technology enterprises. The U.S. of course must do the same (page 120).

This uncritical advocacy of industry policy is moderated in a more recent Business Week (July 4, 1983) cover story "Industries Policy: Is it the Answer?" (pages 54-62) in which proponents are categorized as: (a) Accelerationists advocating allocation of capital to position industries with promise to become strong international competitors to move quickly into world markets; Adjusters supporting adjustment assistance to declining industries; Targeters proposing to focus on a select group of industries with potential to become new engines for economic growth; Central Planners wishing to focus on sectors that could become bottlenecks and engines of inflation in the process of economic growth; and Bankers supporting a federally backed industrial development bank providing venture capital.

This spectrum of policies, regardless of the feasibility of particular position, clearly demonstrates that considerations of economic effiency and international competitiveness have assume renewed priority in considerations of national policy.

Limitations of Federal Policy

The Economic Development Program of the Urban Institute has been examining issues of federal industry policy for over three years. Based on this analysis, we believe that an activist federal industry policy that allocates capital among industries should be discouraged for four primary reasons:

1. We believe that the case for industry policy may have been greatly exaggerated. Without denying the importance of structural changes in the economy over the past decade, significant arguments suggest that some advocates of industry policy have overstated the deterioration of the U.S. economy. A combination of bad luck, inevitable events, changing priorities, and bad policy caused the dismal economic performance of the 1970s. Bad luck in the form of rising oil prices and crop failures that contributed to inflationary pressures; the inevitable rapid increase in the labor force due to the entry of the post war baby boom into the labor market and the rising labor force participation rate of women; changing priorities that mandated significant investment in pollution control which resulted in non-market output not counted in GNP; and what many regard as bad policy in that federal spending on transfer payments expanded faster than GNP. Although the possibility of mistaken policy should never be discounted, the other forces accounting for poor performance of the 1970s are notably absent in the 1980s. Growth of the labor force has declined, real oil prices are relatively stable, and the proportion of new investment required for pollution control is smaller. Concern over rising federal spending is shared in varying degrees by both Republicans and Democrats. In short, a careful look at the current economic conditions does not unequivocally confirm the need for an activist industry policy.

2. There is already substantial federal involvement in the allocation of resources among industries. Muller (1982) argues that, "In one sense, the United States already has an industry policy, but is the worst sort--implicit, ad hoc, uncoordinated, and poorly administered." The extent of this implicit industry policy has been documented in a recent Urban Institute report (Levinson, et. al., 1981) which identified 329 distinct federal aids to industry. The report claims that "On an ex-post or after the fact basis, federal incentives policy does not appear as random or incoherent as suggested by many of its critics..." (page 132). The targets of these programs are agriculture, energy, small and minority owned firms, as well as distressed localities and industries. As an implicit industries policy it is targeted to the politically sensitive issues of economic equity and special interests rather than economic growth and efficiency. In our judgment, federal policy should focus on rationalizing existing public sector activities. If

rationalization of these programs is politically possible, this implicit policy could be altered to promote economic growth.

3. Further, we believe there is ample evidence to document the risk that attempts to stimulate economic growth through federal microeconomic interventions could be skewed by political pressures to disperse the benefits widely among political jurisdictions and industries regardless of the return to capital.

4. Finally, our research has confirmed that industry performance, even within a single industry varies widely among regions in the United States (Garn and Ledebur 1981, Ledebur and Moomaw, 1981). Uniform federal policies insensitive to these regional variations, therefore, are unlikely to achieve the anticipated results.

Dimensions of Federal Policy

Despite these reservations, we recognize that the desire for improved economic performance creates considerable interest in adopting policies designed to accelerate national economic growth.

In addition to rationalizing existing public policies toward industry, we recommend that the primary focus of federal policy should be (1) federal tax and expenditures policy and (2) easing the frictions caused by fundamental economic transformations.

Federal Tax and Expenditure Policy. Tax and expenditure policy can provide a loosely targeted industry policy that encourages activities that stimulate economic growth rather than favoring particular industries and sectors. Among the activities deserving consideration in such a scheme are investment in non-residential private capital, public infrastructure, worker retraining, initial human capital investment, applied research and development, and basic scientific research. Tax policy can facilitate many of these activities but for some, particularly human capital investments, public infrastructure and basic scientific research, there seems no alternative to direct public expenditure.

Easing the Frictions of Economic Transformations. Economic change inevitably affects the distribution of income and wealth. Individuals adversely affected by declining industries, changing patterns of international trade, and technological change often seek relief from the government, thereby raising obstacles to economic change that can raise productivity in the long run. To reduce resistance to economic change, the government can provide compensation to cover some of the losses suffered by individual workers and assistance that will help re-establish them in alternative employment. It is important to emphasize that such programs must require that workers adapt to change rather than allowing them to accept the assistance as a temporary unconstrained transfer payment. If industry policy is to address issues related to improving productivity, this category of programs could play a useful role.

Role of State Industrial Development Programs in Industry Policy

As an alternative to federally directed industry policy, we recommend that careful consideration be given to the potential role of a reoriented state industrial development program in a "federalist" industry policy.

State and local economic development programs are overt efforts of sub-national governments or authorities to stimulate employment and, in some circumstances, revitalize distressed communities. To these end resources are expended by state and local governments to increase economic activity; an implicit industry policy. Activities supported in these local efforts are designed to increase economic activity in the specific jurisdiction beyond what it would have been without the expenditure of development funds.

State administered development programs allocated almost $19.8 billion in 1981.[1] Direct expenditures in the form of grants and customized training accounted for $44.1 million, a miniscule portion of the total. Other programs facilitate the availability of capital and/or reduce the cost of capital via direct loans, interest subsidies, quasi-independent and private capital corporations, and industrial revenue bonds. These capital subsidies are dominated by federally funded (via tax expenditures) industrial revenue bonds; in 1981 new issues amounted to $19.3 billion dollars. Small issue IRBs, those that subsidize interest costs to firms that do not serve any explicit public purpose accounted for $12.66 billion in that year. A more detailed breakdown of these state administered economic development programs is presented in Table 1. A large implicit industry subsidy program is conducted by state and local governments. This program can hardly be called an industry policy because less than one percent of the allocated resources in 1981 were targeted to specific industries, high tech firms, R & D activities, small firms, minority firms or to distressed geographic areas.

These programs and the role state and local governments play in their administration could play an important part in a rational national industry policy. The reason is simple. Across the board programs such as more favorable tax treatment of research and development, benefit all firms undertaking this activity in all states. So long as R and D activities are scattered widely among the states, such proposals have a reasonable chance of political acceptance without some pork barrel legislation designed to placate those states or local jurisdictions that will not receive a "fair share" of

---

1. In August of 1983, The Urban Institute Press will publish a comprehensive directory of all state programs providing financial assistance to firms and industries. The data of Table 1 and the discussions of this section derive from this directory.

Table 1

ALLOCATION OF STATE AND LOCAL DEVELOPMENT RESOURCES, 1981

		Cumulative Commitments
Direct expenditures		
Grants	$ 2,684,392	
Customized training	41,484,747	
Subtotal	44,169,139	$ 44,169,139
Loans	306,897,141	
Subtotal		351,066,280
Interest subsidies		
Direct	3,000,000	
Loan guarantees[a]	18,752,177	
IRB guarantees[a]	39,054,423	
Total	60,806,690	
Subtotal		411,872,889
Quasi-independent and private Corporations		
Equity/venture capital	31,276,116	
Private development credit	43,597,313	
Total	74,873,429	
Subtotal		486,746,318
Revenue bonds		
Industrial revenue bonds	19,309,136,424	
General obligation bonds	3,650,000	
Umbrella bonds	156,383,000	
Total	19,321,786,424	19,799,532,742

Source: Larry C. Ledebur and David Rasmussen, "State Development Incentives", Urban Institute Project Report, May 1983.

[a] Ohio and New Jersey guaranteed both loans and IRBs. Half of the guarantees provided by these two states are arbitrarily allocated to each program.

the funds. When the federal government engages in the support of specific industries or firms, the "law of political dispersion" will surely play its role to insure that the benefits are widely distributed among different states and localities within states. The Economic Development Administration's effort to target assistance was hampered by this process that resulted in 80 percent of the United States being eligible for relief as "distressed areas."

Geographic considerations will inevitably play a major role in the development of a national industry policy. Coupled with the fact that states are already allocating a substantial amount of financial capital every year to stimulate employment, this suggests that state industrial development programs might play an important role in the administration of a national economic development policy.

State economic development programs usually focus on job creation and economic revitalization. To achieve this purpose, state and local programs are "rationally parochial" in that their purpose is served equally well with the creation of a new job as with the pirating of a job from a neighboring jurisdiction. If state economic development programs are to be integrated into a "federalist" industry policy, these programs must be targeted to promote projects that are likely to increase overall economic activity in the nation rather than simply re-arranging the location of a fixed amount of activity. A locally based industry policy must focus on the issues of increasing productivity, increasing competitiveness vis-a-vis our international trading partners, spurring technological advance and revitalizing distressed industries. In short, the programs at the state level must be oriented to serve the national interest as well as those of the state and local jurisdictions.

The challenge is to turn this hodge-podge of state economic development incentives into a plausible state administered "federalist" industry policy. Existing incentives and potential innovations might be expected to achieve one or more of the following goals relevant to industry policy: 1) increase aggregate investment in the nation, 2) increase factor productivity, and 3) improve access to capital markets for small and risky enterprises.

Increase Aggregate Investment in the Nation. The $19 billion of subsidized bonds and loans in 1981 accounted for about 5 percent of gross private domestic investment. Recent research has found that the cost of capital is a significant determinant of investment demand, a finding that challenges economic orthodoxy of a few years ago. If this is correct, state and local programs that subsidize capital costs may increase aggregate investment, thereby accelerating economic growth. This is not, however, a compelling reason for states' involvement in industry policy because the federal tax code can more effectively influence the cost of capital by increasing the supply of savings. A further advantage of affecting of interest rates through the loanable funds market is that it is "firm neutral" in that no public agency must allocate the subsidized capital among firms and industries.

Increasing Factor Productivity. Many states have labor training programs that are an integral part of their economic development efforts. Customized training programs prepare members of the labor force for work in a particular plant, with the state underwriting the cost of training on equipment that is similar to that used in a new plant. Training programs that prepare workers for new or higher paying jobs clearly enhance labor productivity. Economic theory suggests that these customized training programs are appropriately sponsored by the state. If the training to be accomplished is specific to the

firm and no other employer can use workers with the acquired skills, the firm has the incentive to train the worker because it can expect to reap the benefits of the training because of its monopsonist position in the labor market. Few skills are firm specific to that degree. More common is general training that can be used directly or easily adapted to other endeavors, making the firm reticient to invest too much in a single individual who might easily find employment elsewhere. Thus the state's activity in training or specific firms is imply an extension of its other general education functions that prepare individuals to be productive members of society.

Customized training programs directly raise the productivity of labor and have the indirect effect of reducing the cost of capital mobility. When a firm contemplates opening a new plant in a location where it has no previous experience, the smooth and timely opening of the plant depends on the availability of a trained labor force. Delays in the acquisition of an adequate labor force can greatly reduce production in the early months, and in the extreme, actually prevent the plant from opening. These upfront lost revenues greatly reduce the cost effectivenss of the proposed plant. Thus, state efforts that promote labor training and labor force acquisition can play a major role in reducing the uncertainties associated with the mobility of capital. To the extent these programs speed the transition of capital from areas of lower productivity to higher productivity, these programs increase the productivity of labor via training and can raise the productivity of capital.[2]

---

2 Although this increased mobility of capital may serve to increase aggregate output, it is clearly a two edged sword from the perspective of state economic development. Distressed areas and regions seeking to retain capital may be less competitive as a result of programs that reduce the risks and uncertainties associated with capital mobility.

This function is clearly compatible with the call for investment in human capital that is an important ingredient in many industry policy proposals. Since these programs are in place and often utilize local educational institutions, the worker training component of industry policy could usefully build on the programs that are already in place in 36 states.

Improve Access to Capital Markets for Small Enterprises. It is widely accepted that small firms contribute more than their proportional share of employment growth. Early estimates of their importance suggests that small firms dominated the employment growth process, a conclusion based on data that did not separate large firm branch plants from small independent businesses. More careful analysis has confirmed the importance of small businesses in the employment process, suggesting that firms with fewer that 100 employees accounted for 33.2 percent of total employment but contributed 39.1 percent of the employment growth between 1978 and 1980. (Armington and Odle, 1982)

Some advocates of development programs to target capital to small firms argue that such a policy will increase the rate of economic growth because small firms innovate at a higher rate than their larger counterparts. Daniels (1982) is a leading proponent of this view, arguing that "smaller firms innovate to foster external development and growth while larger firms innovate to improve internal efficiency, cut costs, and substitute capital for labor." In a review of the innovation literature, Buckrup (1981) concludes that small firms play an important role in the innovation process although it is difficult to define precisely. This review suggests existing research does not identify any correct or incorrect firm size for the purpose of encouraging innovative activity in the private sector while the cost and risk of innovation and differences among industries have worked to create different and sometimes complementary roles for small and large firms. If capital

market imperfections lead to a lower than optimal amount of economic activity in small firms, economic development programs that target capital to these firms might increase economic growth, stimulate innovation, and raise the level of employment over what they would be in the absence of the program.

Small businessmen routinely cite the availability of capital as a primary constraint to expansion.[3] The shortages of capital experienced by these entrepreneurs is explained in the finance literature by the observation that investors are risk averse. This means that when the risk if a project rises (i.e., the variance of the return increases) the investor requires a higher expected rate of return. If capital markets worked perfectly in a world with only risk averse investors, we would expect the risk adjusted returns to be equal for various types of investment opprtunities. Recent research as shown that smaller firms listed on the New York Stock Exchnage have had a higher risk adjusted rate of return than larger firms. (Banz, 1981 and Reinganum, 1981) This size effect persists over time, suggesting that capital markets are either inefficient or that the current models used in the finance literature are mis-specified. However, noting this size effect in the relatively large firms that have access to equity financing via the New York Stock Exchange suggests that very small firms may have an even higher risk adjusted rate of return. If this were the case we would expect venture capital funds which invest in enterprises that cannot go public to earn on average a substantially higher rate of return than firms listed on the stock exchange.

---

3. There was widespread agreement during the 1982 hearings on Enterprise Zones that legislation should work to alleviate the capital problems faced by small businesses. For example, see testimonies of Samuel R. Pierce, Jr., Secretary of the Department of Housing and Urban Development, William C. Morris, President of Control Data Corporation, and Wilson Johnson, President of the National Federation of Independent Business.

Table 2 shows that the return on venture capital funds in the past two decades has been higher than the return on common stocks--a 25.7 percent return on venture capital verses 8.7 percent on all common stocks. Small public firms, defined as those with capitalization in the lower quintile on the New York Stock Exchange, yielded an average return of 18.3 percent--over 100 percent higher than all common stocks and 30 percent lower than the return on venture capital funds. The higher return on small stocks is at least partly a reward for added risk since the standard deviation of these returns is considerably larger than that of all stocks.

If there were a continuum of investor preferences with respect to risk bearing, we would expect the competitive process to equalize the actual rates of return on investments in various risk categories. Given the data in Table 2, it appears there is a systemmatic underinvestment in small firms of relatively high risk, since the ex-post rate of return is higher in venture capital funds and small firms compared to large firms. Thus, over this period, it appears that competitve forces have not allocated as much capital to high risk enterprises as would seem justified on the basis of this average rate of return data.[4]

---

4. A preference for risk aversion is probably not the only source of this anomaly. First, shares in venture capital funds are usually quite large ($1 million), thus limiting the number of individuals able to invest. Second, retained earnings account for over 80 percent of gross private investment. Small firms will therefore have limited access to most of the funds available for investment in plant and equipment. Thirdly, many large institutional investors, such as pension funds, are subject to laws that limit their ability to make investments of a risky nature. Given the long time horizons of pension funds, the above data suggest limitations that reduce the range of acceptable investments should be reexamined. See Litvak (1981) for an extended discussion of the role pension funds could plan in the process of economic revitalization.

Table 2

ANNUAL RETURN ON COMMON STOCKS AND VENTURE CAPTIAL FUNDS, 1960-1980

Type of investment and period	Median return	Mean return	Standard deviation[a]
Venture Capital Funds[b]			
1960-69 (11)	23.5%	25.7%	15.8
1970-74 (20)	22.1%	23.4%	13.4
1975-80 (7)	33.9%	32.5%	13.9
1960-80 (38)	24.1%	25.7%	14.2
Common Stocks (1960-1981)			
Small stocks	-	18.3%	26.71
All common stocks	-	8.6	16.42

Sources: Litvak (1981) and Ibbotson and Singuefield (1982).

[a] The standard deviations for venture capital funds are not comparable with those common stocks. The figure represents variation in the average annual rate of return for stocks while it is the variation in the average annual rate of return for stocks while it is the variation among venture capital funds over the entire time period.

[b] Number of funds in parentheses.

This represents a capital market failure. It is not the traditional kind of market failure that is based on market imperfections (a lack of effective competition) or externalities. Indeed, it is argued that the supply of investment funds in fact reflects the preferences of the investors. The single exception to this occurs when the agency problem exists because the managers of portfolios of risk neutral investors have an incentive to act with more risk aversion than the investors would view as optimal. The quantitative importance of the agency problems is minimal if in fact most investors are risk averse as the current literature posits. The market failure stems not from the traditional sources, but rather from the fact that it is possible for

a different institutional arrangement to realize a higher rate of return if the pooling of investment funds and a spreading of risk could result in a more risk netrual investment strategy.

Targeting to small and risky firms the $19 billion of subsidized capital currently allocated by states would alleviate a shortcoming in the capital market and, presumably, stimulate economic growth, innovation and employment. Left to their own devices, states have not run their economic development programs in a way that is clearly consistent with the national interest. This need not lead to a call for dismemberment of these state and local programs, instead a restructuring of federal involvement may redirect these efforts to be more consistent with the national interest.

Towards a Federalist Industry Policy

State programs that would be an integral part of a federalist industry policy - such as efforts to improve access to capital markets for small and risky firms - should be funded by the federal government. One justification for federal funding is that the great interdependence of the American economy disperses among many states the benefits of a state economic development expenditure. Unable to capture the benefits of its outlays, the state has an incentive to reduce development expenditures relative to those of other states. Total development expenditures by states may be smaller than optimal given this inability to appropriate all the benefits of the expenditure. It is very important to remember that the system of state economic development incentives may yield much greater aggregate benefits than a state-by-state evaluation would suggest.

State economic development expenditures subsidize the federal government, a second reason why federal funding of a federalist industry policy is imperative. When a state loan subsidy raises the profitability of a firm the federal tax liability of that firm increases. The size of this subsidy can be substantial: work conducted at The Urban Institute has shown cases in which over 40 percent of the direct state outlay is ultimately captured by the federal government instead of the intended recipient. The prospect of subsidizing neighboring states and the federal government is a powerful disincentive to expanding development programs with state expenditures.

Urban Institute research comparing the benefits and costs of alternative types of industrial incentives underscores the frequent allegation that industrial revenue bonds are not cost effective from the federal or combined federal and state perspective. Our anlysis demonstrates that this program is far more costly per dollar of benefit received by firms than any other method of subsidizing interest we have examined. Yet, industrial revenue bonds are the centerpiece of state industrial development programs, comprising approximately 97 percent of state allocated business financing. To drastically curtail or eliminate state access to IRB financing, without replacing it with a more efficient source of financing, would devistate state industrial programs in period in which they are being asked to assume expanded responsibilities for economic development and the economic welfare of their communities.

There is a clear need for the Congress to consider alternative approaches to assisting states in the financing to their industrial development programs; approaches that (a) are more cost effective than industrial revenue bonds, (b) entail no greater short-term federal costs than the tax expenditures incurred through IRBs, (c) permit state programs to become self-renewing and

independent of federal assistance within a reasonable period of time. Alternative means for providing federal assistance, consistent with these objectives, can be identified.

Federal Funded State Revolving Loan Funds. Federal funding can be provided to establish state revolving loan programs that make financing available to smaller innovative firms. Financing through state revolving loan funds should be made with royalty provisions that permit states to share in a percentage of the sales of successful companies. The need to maintain the capitalization of the revolving loan fund would create an incentive for good management and effective targeting that does not exist in the current IRB program.

After gradually building under federal funding for five to ten years, these revolving loan funds should become self-perpetuating and independent of federal resources. Inclusion of royalty arrangements in loans would permit the necessary capitalization of the fund to be achieved more rapidly and the size of the fund to be increased over time. The federal program administering this assistance to states, therefore, should be established with a sun-set provision terminating its function after a specified number of years.

Although unique in scale, the funding of state revolving loans would not be a new federal initiative. The Economic Development Administration has made a positive contribution though capitalizing all, or part, of several state and urban revolving loan programs.

Federal Funded State Loan Guarantee Reserve Funds. Guarantees of industrial loans from commercial lending sources are a highly cost-effective method of providing below market rate of interest and/or higher risk loans to small innovative firms. Federal funding could capitalize state loan guarantee reserve funds.

Through yearly allocations, the size of these state reserve funds could be built to designated levels and the federal program terminated. State appropriations then would be necessary to offset defaults of guaranteed loans and maintain the level of the reserve funds. The need to minimize these yearly state appropriations would create an incentive for effective targeting and management lacking on the present industrial revenue bond program.

Federal Guarantees of State Pension Fund Industrial Loans. State pension funds represent a pool of financial resources largely untapped in state economic and industrial development. If means can be found to negate the risk to the fiduciary soundness of these funds, some portion of these resources can be directed to achieve state industrial objectives. Creation of national industrial pension fund loan guarantee program would provide this means for securing industrial loans from state pension funds. The necessary incentives for effective targeting and careful management of federally guaranteed loans from state pension funds must be an integral part of such a proposal.

Secondary Markets for Commercial Small Business Loans. In conjunction with the Federal Small Business Administration, Minnesota implemented an innovative approach to small business finance that potentially can serve as an effective alternative to IRB umbrella bonds. Under the "Minnesota Plan" the Minnesota Small Business Finance Agency (MSBFA) is authorized to issue taxable bonds in amounts ranging from $50-100 million and serves as the trustee for the funds.[5] Businesses seeking financing under this program apply to their local banks. If the bank is interested, it in turn applies to the federal SBA for a guarantee for up to 90 percent of the loan. Upon SBA approval of the

---

5. MSBFA uses taxable bonds because, under Internal Revenue Service Guidelines, tax exempt bonds cannot be used in conjunction with federal guarantees.

loan and guarantee, MSBFA will repurchase the guaranteed portion of the loan from the bank.

By creating a secondary market for commercial small business loans, the "Minnesota Plan" encourages banks to make fixed-rate long term loans because 90 percent of the bank's loan is quickly recaptured through the MSBFA purchase of the loan. As part of the arrangement, the bank agrees to "pass through" the interest rate on MSBFA's bond issue to the borrower.[6]

Conclusion

Discussions of industry policy have too often ignored the role states' can play in the creation and operation of a reasonable industry policy that it also politically acceptable. A reasonable industry policy, in our view, should not involve a highly centralized federal authority that allocates capital to firms and industries that are deemed worthy of support. We believe that the capital market is generally the most effective means to allocate needed resources to firms with potential for growth. The exception to this general perference for the market allocation of capital is the apparent failure of the market to invest enough capital in small and risky ventures. An industry policy ban usefully address the impediment to growth.

Compelling economic and political considerations suggest that states should administer such an effort. First, because every state in the union has some economic development effort in place, a state administered industry policy could be begun with experienced personnel and appropriate institutions in place. For example, 21 states already administer direct loan programs.

---

6. The effective rate to the borrower is the rate on MSBFA bonds plus cost of issuance, the guarantee fee and the bank's service fee.

Second, state administration will necessarily spread resources widely over the political landscape, an implicit requirement for federal programs. Third, an industry policy administered by states is likely to generate a more diverse portfolio of investments as each state tries to take advantage of its best opportunities. A federally administered program is more likely to adopt an investment strategy that limits the range of investments, thereby raising the riskiness of its loan portfolio. Finally, state administration provides a ready and simple way to experiment with new programs and innovative financing techniques. With appropriate targeting requirements and new federal spending to replace the IRB program, existing state economic development program can be a cornerstone of a reasonable national industry policy.

Bibliography

Armington, Catherine and Marjorie Odle, "Sources of Recent Employment Growth, 1978-1980, mimeo, 1982.

Banz, Rolf W., "The Relationship between Return and Market Value of Common Stocks, "Journal of Financial Economics, March, 1981.

Buckrup, Deborah L., "Innovation in the Privte Sector: A Review of Firm Effects", Urban Institute Working Paper 1395-4, February 1981.

Business Week, "The Reindustrilization of America," Special Issue, June 30, 1980.

Daniels, Belden, "Capital is Only Part of the Problem," in Peter J. Bearse, ed., Mobilizing Capital, Elsevier Press, New York, 1982.

Enterprise Zones-1982, Hearing Before the Subcommittee on Savings, Pensions, and Investment Policy of the Committee on Finance, U.S. Society, 97th Congress, APril 21, 1982.

Garn, Harvey and Ledebur, Larry, "Congruencies and Conflicts in Regional and Industrial Policy," The Urban Institute, 1980.

Garn, Harvey and Ledebur, Larry, "Industry Policy: Is it the Answer?", July 4, 1983.

Ibbotson, Roger G. and Rex A. Singuefield, Stocks, Bonds, Bills, and Inflation: The Past and Future, Monograph No. 15, The Financial Analysts Research Foundation, 1982.

Ledebur, Larry and Rasmussen, David, State Development Incentives, 1983.

Levinson, Phyllis; Bendick, Marc; Ledebur, Larry; and David W. Rasmussen, The Federal Entrepreneur: The Nation's Implicit Industries Policy, The Urban Institute, 1981.

Litvak, Lawrence, Pension Funds and Economic Renwal, Council of State Planning Agencies, Washington, 1981.

Muller, Ronald E. and David H. Moore, "America's Blind Spot: Industrial Policy," Challenge, January/February 1982.

Muller, Ronald E., Revitalizing America: Politics for Prosperity, New York: Simon and Schuster, 1980.

National Association of State Development Agencies, National Council on Urban Economic Development, and The Urban Institute, Directory of Incentives for Business Development and Assistance in the United States: A State-by-State Guide, Washington, DC: The Urban Institute Press, forthcoming August 1983.

Reingnaum, Marc R., "Misspecfication of Capital Asset Pricing," Journal of Financial Economics, March, 1981.

Rohatyn, Felix, "America in the 1980s," The Economist, September 19, 1981.

Schwartz, Gail G. and Pat Choate, Being Number One: Rebuilding the U.S. Economy, Lexington, Mass: Lexington Books, 1980.

Representative SCHEUER. Mr. Ady, please proceed as you wish.

STATEMENT OF ROBERT M. ADY, EXECUTIVE VICE PRESIDENT, THE FANTUS CO., CHICAGO, ILL.

Mr. ADY. Thank you, Congressman, my name is Robert Ady and I'm executive vice president of the Fantus Co.

We are generally acknowledged to be the oldest and largest firm in the field of facility location. During our 60-year history, we have conducted over 6,000 site selection assignments for firms in all fields of manufacturing, distribution, research and development, and office clerical activities. It is estimated that Fantus performs about 70 percent of all the corporate projects involving a location consultant.

Our staff regularly meets with corporate executives in assessing the difficult tradeoffs of location decisions and are privy to the real reasons why companies locate where they do. As a matter of possible interest, during the past 3 years we have assisted 86 high technology firms in selecting locations throughout the world.

I have been with Fantus over 20 years and have personally conducted hundreds of location studies. My clients include such firms as General Mills, Honeywell, Pratt & Whitney, Sumitomo Electric, Cincinnati Milacron, Mobil Oil, Amana, Rockwell, and many others.

Thank you.

Representative SCHEUER. Your prepared statement will be placed in the record at this point, Mr. Ady.

[The prepared statement of Mr. Ady follows:]

PREPARED STATEMENT OF ROBERT M. ADY

Qualifications of the Witness

The Fantus Company, a PHH Group Company, is generally acknowledged to be the oldest and largest firm in the field of facility location analysis. The operations of Fantus are worldwide and since 1919, the organization has conducted over 6,000 location assignments for firms in all fields of manufacturing, distribution, research and development, and office/clerical activities. It is estimated that Fantus performs about 70 percent of all corporate projects involving a location consultant.

The Fantus staff regularly assists corporate executives in assessing the difficult tradeoffs in the location decision and are privy to the reasoning that leads to the final selection of communities. As a result, Fantus has unparalleled insights into the actual factors influencing corporate location decisions, including the impact of state and local economic development programs. Of possible interest, during the past three years Fantus has completed 86 location studies for companies involved in high technology.

I have been with Fantus for over 20 years and have personally conducted hundreds of facility location studies. My client repertoire includes such firms as General Mills, Honeywell, Pratt & Whitney Aircraft, Sumitomo Electric, Cincinnati Milacron, Mobile Oil, Amana and Rockwell International. I have spoken before various groups and conducted seminars on such subjects as plant location analysis, high technology location determinents, and the effect of federal incentive programs on facility location.

State Programs For Industry

State government programs to support and strengthen business and industry can be classified into four broad categories: financial assistance, tax incentives, training programs and special services. Ranked in order of popularity training assistance is most popular with all the states involved to some degree in this activity. Next in popularity are tax incentives of one kind or another, with about half the states offering major programs. This is followed by financial assistance which is offered by about 40% of the states, and special programs, offered by about 20% of the states.

State training assistance consists of support for training facilities, programs and staffs for the recruiting, training and retraining of workers. Many states now have training facilities within an hour's drive of all their population. Certain states are developing "centers of excellence" or equivalents wherein specific programs are concentrated in specific schools, i.e. robotics in one school, biotechnology in another, fiber optics in yet another, etc. Of course, all states have college and university systems. Most are becoming more active in economic development.

State tax incentive programs take many forms with the most popular being inventory, raw material and new equipment tax exemptions. However, other popular exemptions, either full or partial, include corporate income, personal income and machinery and equipment exemptions. New programs include tax incentives for job creation and tax exemptions for R&D.

State financing programs include establishing state authorities for the issuance of industrial revenue bonds and general obligation bonds; state loans and guarantees for buildings, machinery and equipment; and financial aid for plant expansion.

Special state services for economic development include funds for city/county public works projects, programs for the promotion of R&D, state financed speculative buildings and state owned industrial park sites. Of these, the latter two are increasing in importance.

Local Programs For Industry

It is very difficult to generalize about local programs for industry. First, few communities have formal programs; most are generated to meet a specific prospect need. Next, the amount of money or talent dedicated to economic development varies significantly from community-to-community. Finally, and probably most importantly, the vast majority of towns have no local program. Of about 35,000 incorporated cities in the U.S., Fantus estimates that fewer than 10,000 are actively seeking economic development.

Community programs most frequently focus on site development and improvement. This includes utility extensions, grading, local street improvements, zoning, etc. Other assistance is invariably limited to providing the authority to issue revenue bonds and possibly some limited funding of training assistance.

Success of State and Local Government Development Programs

Companies today proceed to locate facilities based upon traditional plant location factors, both cost and noncost. Cost factors can be grouped into five basic categories: labor, transportation, utilities, occupancy and taxes. For a typical manufacturing plant geographically variable costs - that is costs that are affected by location - are split among the five basic cost elements as follows: Labor - 55 percent; transportation - 40 percent; electric power - 2 percent; occupancy - 2 percent and taxes - 1 percent. For high technology firms ratios are significantly different with labor representing 70 percent; transportation only 15 percent; electric power 2 percent; occupancy 5 percent and taxes 8 percent. High technology firms are much more sensitive to labor cost variations and tax cost differences.

Noncost factors, or subjective factors which are difficult to evaluate in terms of dollars and cents, can include only a handful of requirements for some firms and industries and literally hundreds for other industries. However, key noncost factors of importance to most siteseeking firms are: labor availability, productivity, and trainability; educational facilities; transportation and electric power dependability; and overall living conditions. These criteria are important to both traditional manufacturing plant location and high technology plant location.

Once the need for a new facility has been justified, companies do not then contact government officials to determine what financing or incentive programs are available. To the contrary, they usually settle on a few locations in one or a few states that fulfill "traditional" location requirements and then determine from local and state officials what programs are available which will assist them in increasing the ROI on the project facility or alleviating start-up difficulties.

Quite bluntly, the typical plant location scenario suggests that existing state, local, and indeed federal, programs do not stimulate facility location. The market place and product demand continue to be, as they always have been, the driving force. Companies do not expand to take advantage of a state or local economic development program but rather to meet present or projected future market demand. Once the need has been identified, however, such programs may have some influence on where a facility will locate.

State Government Role in Implementing a Federal Industrial Policy

If the Federal Government institutes an industrial policy, it would be exceedingly difficult to integrate it into existing state development programs. First, with few exceptions, states lack any cohesive game plan or long term economic growth strategy. Most programs are reactive rather than proactive. Many programs are added to nullify programs instituted by other states. Other programs are added to meet a specific company or industry need.

Next, states do not have the infrastructure and resources in place to implement an industrial policy. Congress would have to build an organization and provide the necessary funding from scratch in each of the 50 states. Further, a unified policy would be most difficult to administer and implement in concert with state governments in a timely fashion.

This is not to say that there isn't a role for state government to play in implementing an industrial policy. The most appropriate role would be to implement identified worker training programs that would be required by the Federal Government. In addition to the fact that all states presently have training facilities and offer training programs, American business, after many years of skepticism, now freely works with universities and vocational/technical schools in establishing training and retraining programs. By and large most state training programs have achieved credibility among companies. Further, this form of state assistance is currently the most frequently requested by siteseeking companies. Therefore, if there is a role for the states to play in implementing an industrial policy, it should focus on the training and/or retraining of workers.

Mr. ADY. What I would like to do, Congressman, is to take each of the questions that you raised in your opening statement and answer them from the viewpoint of the corporate site selector.

First, what are State governments currently doing to support and strengthen business? Basically, their programs fall into four areas—financial assistance, tax incentives, training programs, and special services. In terms of popularity, training assistance is the most popular. All States have some form of training assistance that they offer to business.

The next most popular are tax incentives of one kind or another. That is followed by financial assistance and finally, by special programs.

State tax incentive programs take many forms, but the most popular are exemptions of various kinds or another for various periods of time: Inventory, raw material, new equipment tax exemptions, full or partial exemptions from corporate income and personal income taxes, machinery and equipment exemptions. Some of the new programs include incentives for job creation, such as in New York, and tax exemptions for R&D.

State financing programs include establishing State authorities for the issuance of revenue bonds and general obligation bonds, as well as State loans and guarantees for building machinery and equipment, and State aid for new construction.

Special services, which is a new and growing activity among the States, focuses frequently on target industry identification and on research and development type activities. Also, under a special program, the States are moving into the areas of financing speculative buildings and purchasing property for economic development. The latter two are increasing in importance.

The next question you asked is what are local governments doing? This is a much more difficult question to assess or to analyze because there are so many different communities, it's hard to establish a generalized pattern.

First, communities that do have formal programs are usually generated for a specific need. There is very little pattern or continuity among programs established from one community to another. It depends on the economic wealth of the community, the desirability of the community for new economic growth, and the attitudes and enthusiasm of the local population for economic growth.

So there's a wide diversity of approaches and levels of activity from community to community.

I think the important point to note is that of some 35,000 incorporated communities in the United States, less than 10,000 actually have any kind of economic development program. So it's not as ubiquitous as people are sometimes led to believe.

Representative SCHEUER. Or putting it another way, 10,000 of 35,000 do have programs.

Mr. ADY. Right.

Representative SCHEUER. I think that's a pretty impressive number and there should be some good experience coming out of that.

Mr. ADY. OK. There may be good experience, but it's going to be hard to analyze any continuous pattern, because most of these com-

munity programs are focused upon a specific need at specific times. For example, International Harvester in Fort Wayne. That program was put together by the community and by the State to address a specific community need. Other communities in other areas have different needs and they're different avenues and different approaches.

I think the limits of what communities do are only bound by their talents and ingenuity and the resources they're willing to dedicate to it.

If there is any generalization to be made about community programs, however, I would say that most of them focus in the area of site development of one kind or another. Extending of utilities, preparing sites, proper zoning, that type of thing, that's the primary focus of local community programs.

The next question you ask is what is the success of State and local government programs? Companies today proceed to locate plants based upon traditional plant location factors, such as cost factors and non-cost factors. Cost factors can be categorized into five general groupings—labor cost, transportation cost, utility cost, occupancy cost, and tax cost.

In terms of how they shape up, this is a gross generalization but for typical manufacturing plants, labor costs represent about 55 percent of total geographically variable costs, which are costs that vary from place to place. That's how the definition of that works.

Transportation costs are 40 percent, electric power 2 percent, occupancy 2 percent, and taxes 1 percent.

For high technology firms, the mix is a little different. Labor costs increase to 70 percent. Transportation drops to 15 percent. Electric power remains at 2 percent. Occupancy increases to 5 percent. And tax increases to 8 percent.

That's the cost side of plant location in 2 seconds.

The non-cost side—these are the subjective factors, which are becoming more and more important in this country. And these are ones that you can't necessarily evaluate in terms of dollars and cents, but are critical to the location decision.

Some of our clients will identify four or five key non-cost factors. Others will have literally hundreds of non-cost factors that have to be satisfied at a given location.

I'm saying this because I think you have to put the level of State involvement and local involvement in perspective to the true essence of plant location, which is much broader, much greater, and covers many more disciplines than what we are hoping to address today or what States and local governments have addressed in the past.

I would say, bottom line, that the typical plant location scenario suggests that existing State, local, and, indeed, Federal programs do not stimulate facility location. The marketplace and product demand continues to be, as they always have been, the driving force. Companies do not expand to take advantage of a State or local economic development program, but rather, to meet a present or future market demand. Once the need has been satisfied, however, or identified that there is a market demand, then programs can come into play in influencing where a company will locate a facility. It's the tail rather than the dog.

Now your other question—what should be State government's role in implementing Federal industrial policy?

If the Federal Government institutes an industrial policy, it would be exceedingly difficult to integrate it into any existing State development programs. First, with few exceptions, States lack a cohesive game plan or any kind of long-term economic growth strategy. Some States are starting to move in this direction and I agree with Mr. Rasmussen that in the last couple of years, they have made attempts to formulate economic strategy, especially as it relates to high tech location development. But the simple fact of the matter is there is no cohesive State policy. They are usually reactive rather than proactive. They are put into effect to nullify another State's competitive advantage. They're put into effect because of a specific circumstance within that State that they're addressing which might be peculiar to the State.

There's very little uniformity among State programs, the same as local programs. And further, States do not have the infrastructure or the resources in place to implement any kind of sophisticated industrial policy.

I think, again, we have to put into perspective the level of State involvement in this area. I tried to get a number as to how much States were expending on economic development, not on industrial revenue bonds, which I think is a separate and distinct issue from what I'm addressing. But just on economic development programs. And if you're talking in the range of $110 million or so, that's a pretty involved State program for just the area of economic development.

So the resources are limited.

I remember when we located Volkswagen in Pennsylvania, that single plant took care of all their training funds for years and years, just dedicated to one plant. And that frequently is the case.

Representative SCHEUER. All whose training funds?

Mr. ADY. The State of Pennsylvania's.

Representative SCHEUER. Yes.

Mr. ADY. That they had available for training. So these programs are not as awesome as a compendium of activities might indicate because they are not financed to the extent that you may be led to believe. And the infrastructure isn't there. They don't have, many States do not have the level of employees, States employees, necessary to carry on any large program. There may be only one person or two people who cover the entire high tech location strategy for the State, including contacting prospects and visiting with them and putting together packages and everything else.

They are moving in the direction, however, more and more in terms of targeting industries. But what I'm telling you the bottom line is that they have a long way to go.

Representative SCHEUER. They have a long way to go in doing what?

Mr. ADY. In terms of putting together a sophisticated, cohesive, unified, well organized, and efficient program.

Representative SCHEUER. To attract industry.

Mr. ADY. To attract industry. Right. Exactly right. In terms of an area where they may be involved, I can tell you from experience that training programs have been very successful. They are very important to the new generation of industry growing up in America. Businessmen, after many years of skepticism concerning State and local training programs and vocational training programs, are now very anxious

and interested to take advantage of these programs wherever they locate.

A number of years ago, many States put together vocational programs where their policy was to have a vocational school within 50 miles of every person within that State. I think Tennessee was the first one, although I wouldn't swear to it. And when that program first started, many businessmen were skeptical of the program and the type of training that students would get. But they have done a complete 180 degree turn since those programs were first initiated. They are very comfortable with training programs. They are very anxious to utilize training programs.

All States have training programs, which is another advantage of focusing State involvement in this area.

Also, I think they have better knowledge of the level of training that might be needed in different areas within their States so that training programs, in concert with any kind of industrial policy that might be put forth by the Federal Government, could be better administered to fit the needs of the particular populace in their State.

In terms of the other areas, I think that the amount of time, money, and organization that would have to be expended from the Federal level to put the States into—to establish an industrial policy at the State level would be awesome.

Representative SCHEUER. So you don't really see any role for a major Federal assist to States and local governments in developing their own industrial development policy.

Mr. ADY. No; I think the Federal Government would have to take the lead.

Representative SCHEUER. Do either of you recall, in the last couple of months, there was some writing about a major industrial giant, a high tech giant, that looked the length and breadth of the country for a location for a major installation. They judged cities on what seemed to me a very careful and well thought out basis. They finally settled on some city, San Antonio, Tex., or a city of that kind.

Did either of you read that?

Mr. ADY. Are you talking about the micro-biology, and electronic consortium that was put together by a number of electronic companies?

Representative SCHEUER. Right.

Mr. ADY. And they did, in fact——

Representative SCHEUER. Where did they settle?

Mr. ADY. They settled in Austin, Tex.

Representative SCHEUER. Austin, Tex. I do remember reading that. That was long before I thought, I ever dreamed I was going to be chairing this hearing, or I would have read it more closely.

But as I recall that article, they didn't think about the cost of power or the cost of transportation. They thought about the quality of schools. They thought about the quality of life, did the city have a symphony orchestra, did they have a wide variety of educational, cultural, and recreational facilities around there?

Maybe it was because it was a super duper high tech labor clientele that they were looking for. But mostly, it was a quality of life evaluation.

If you took that search, if you took that experience at face value, then what the Federal Government should be saying to cities and

States is do something about the quality of life. That's the best way to attract plants. Do something about your crime, your recreation, your culture, especially the quality of your education systems, because professional people will not go to communities that don't have adequate schools.

I'm going to have to reread the stories about that selection process. They're certainly relevant, are they not, to this subject?

Mr. ADY. Somewhat. I think that we have to make a distinction between new industry that is very highly scientifically oriented, which, in fact, results in an increasing awareness of living conditions, quality of life, those very factors that you mentioned, and manufacturing industries, which typically——

Representative SCHEUER. Looking for blue-collar labor.

Mr. ADY. That's right, and really create the jobs of America. I'm sure you are aware of the fact that if all the high tech in the world ever came to pass——

Representative SCHEUER. We still need our smokestack industries.

Mr. ADY. That's right. That's exactly right. And those other factors are very important.

Representative SCHEUER. On the other hand, there are places where if you located an industrial plant, you still would have trouble getting skilled blue-collar labor to go there.

Mr. ADY. Yes, sir, and one reason is because many of the vocational schools today are teaching students courses in activities that are gone. I think it's ridiculous. Many schools use a program called historical precedent, where you justify a new course based upon the number of times that the course has been required in the past.

Well, that's great if you're always going to need spray painters. But if you're moving into robotics and you don't have any mechanism to introduce these new courses into the curriculum, it's a very troublesome thing.

Mr. RASMUSSEN. I'd like to comment, if I may, on two issues. One is whether or not the Federal Government should take the lead in its relationship with the States.

Indeed, I think I would agree that the Federal Government does need to take the lead and to reshape what are the largely untargeted and, to a large extent, purposeless State development programs, largely because they're engaged in zero sum games. And I think we've just touched on that in the last discussion in the last couple of minutes.

Representatives SCHEUER. Just for the sake of the record, elaborate on that statement.

Mr. RASMUSSEN. To a large extent, what States are engaged in is the attraction of industry. We just used that term a minute ago. And the attraction of industry, from the national point of view, doesn't do much good. When Florida, which has really quite a good economic development program, takes a plant out of Alabama or Georgia because the market conditions are in that southeastern region, the national interest is not particularly served. Florida's interests are served by that particular activity, but the Nation is not.

Representative SCHEUER. You could considerably make the point that Florida's interests are only served marginally. It might worsen the overcrowding.

Mr. RASMUSSEN. A unique problem to Florida.

Representative SCHEUER. Pardon?

Mr. RASMUSSEN. A unique problem to Florida.

Representative SCHEUER. The course might be vast in the area where the plant moved from; whereas, the net economic gain for the State of Florida, in terms of costs and benefits, the net gain might be marginal, if at all.

Mr. RASMUSSEN. And this is why I believe that the Federal Government should be taking a lead in reform—the Federal Government is currently funding the allocation of $19 billion of capital a year through the industrial revenue bond program.

Representative SCHEUER. Through State and local industrial bonds, yes?

Mr. RASMUSSEN. Right.

Representative SCHEUER. And what you're saying is that's probably being as unguided as it is and from any cost-benefit calculus being as unproductive as it is, that's probably an unwise program.

Mr. RASMUSSEN. Yes. But what can be done, though, using the State and local skills and development programs would be to target this to firms that aren't going to move to another State, but that are a potential generator of jobs.

For example, in inner cities, frequently you have small firms. They may be ready to make a move, for example, so they can expand. They're in a bad location. They're a small firm. They might be in a somewhat risky position in terms of the market, but with great potential payoffs, and they can't get capital. They're too small, in many cases, to take advantage of IRB's as they exist. Here is a tremendous potential for expansion. No State is going to try to pirate them. You know, when you're in the middle of Louisville, Houston isn't going to spirit you away.

Representative SCHEUER. Yes.

Mr. RASMUSSEN. And it's this kind of situation that we can really stimulate economic growth. It would be the Federal Government taking the lead. It would fund the program, insist that the States target it in this basic way. And it would be local economic development that would, in fact, have a chance of stimulating national economic well-being because the firm would not be moving from one jurisdiction to another.

Representative SCHEUER. I don't want to dash a bucket of cold water on this view of yours, but I am not that impressed with the ability of the Federal Government or the State or city governments, for that matter, to identify high risk enterprises, especially very small, untested, high risk enterprises and give them the resources that they need to go.

Mr. RASMUSSEN. One way to handle this problem, as it's being done in several States already, is that banks are integrally involved in the evaluation process. So it's not States playing the role of entrepreneurs, but rather, it turns out to be banks that say, "Listen, we're not going to give you a loan unless we get part of its guaranteed, for example, or unless we reduce our exposure."

And so in this way, it can be a public-private partnership where the States provide, or the public program provides, that extra boost to get private funds committed to a project.

24-862 O - 83 - 10

I would certainly agree with you that neither the Federal Government, nor State or local government, should be involved in playing banker, identifying promising entrepreneurs.

Representative SCHEUER. I don't say they should, but I say that as a matter of characteristics and temperament, they don't. I had some experience with the FHA programs before I came to Congress; specifically, the section 220 FHA programs that were designed to clear slums and were the riskier programs for private enterprise because they were building new capital, new housing, in the rundown parts of town, crime-ridden parts of town, where it was sometimes tough to get people to move into, no matter how attractive the housing was.

Now Congress recognized that this was a risky business and they mandated that the FHA had to give 90 percent loans based on replacement cost, not on value. Under the FHA formula, if you build a nice suburban project, you'll get a loan of 80 or 90 percent, whatever it is, based on value. But if you build a project, a new project, in the declining central city area, the value goes way down and, as a result, you'll be lucky to get a 50-percent loan.

So Congress, in its wisdom, to encourage the development of these slum clearance projects, mandated that the FHA, for this particular title, issue 90 percent loans based on reproduction costs, just on construction costs, really.

Well, I was in that program for many years until I was a Congressman. And the FHA, which was used to these nice, comfortable suburban programs, just never was brought kicking and screaming into the 20th century on these much more risky downtown programs. And they would take anywhere from a year to 2½ years to issue a simple mortgage based on reproduction costs that are really quite simple to prove. It's easy to prove what it costs to build an apartment. You can do it within 1 or 2 percent.

My big problem with them was that by the time I finally got them to issue a mortgage, 18 months or 2 years had passed. By that time, construction costs had gone up by 1 percent a month and so now they were 18, 20, 24, or 25 percent greater, and I had to start the whole process over again.

In other words, there was a great disinclination for this agency, and I'm not leaving the finger of blame on it—I'm just trying to say that government bureaucrats, by nature, are government bureaucrats and they are not being paid to take risks, and if a guy's within a year or two of retirement, what he wants to do is stay out of trouble and not sign anything that could embarrass him, and they don't take risks. They simply do not take risks.

This was true even in a program passed by Congress that mandated them to have the FHA take the risk and gave them a very clear and simple standard of what they should deliver the loan based on—construction costs. They still found ways to evade it, and evade it, and evade it for months, and years on end.

So I lost a little of my confidence in the ability of government at any level, really, to administer promptly and effectively risky programs, innovative programs. That doesn't mean to say that here and there there weren't some really fine things done. But it was like pulling teeth.

Mr. ADY. I would like to make one statement concerning I think a misconception, and it has to do with the economic consequences of relocating from Alabama to Florida.

Relocations, contrary to popular belief, are, in fact, not very prevalent today. There were many relocations that did occur in the 1950's. But I think that the relocations that are occurring today can be many times one of survival for the company. They could be in an untenuous situation at a given location for one of many, many reasons where the economic vitality of the company itself is threatened.

In those cases, I think it's a question of whether they stay at one location and cannot compete effectively with foreign or whatever kind of competition or relocate where they can survive and can, hopefully, grow and develop.

I think that type of situation is not uncommon and it should be recognized in the scenario concerning economic value of one place to another.

Representative SCHEUER. If we were to go ahead with some kind of a Federal program, some kind of a Federal industrial policy, what would you think the goal ought to be? Should we concentrate on encouraging high tech industry, the sort of Silicon Valley that they have out in California, encouraging winners, picking winners the way MITI did in Japan, to some extent? Or do we try and revive basically depressed industries such as there's talk of doing today with the steel industry, such as we tried to do with Chrysler, and helped Chrysler. There's no question about it. Chrysler is now a going concern.

Or do we try and help, not depressed industries, but to help depressed areas? Do we try and bring almost any kind of industry, industrial policy, smokestack industry, research, whatever, commercial, retail, to depressed areas? What should be our criteria in using the spigot and aiming that spigot?

Mr. ADY. Well, I'd like to answer the last one first because from my point of view, as an industrial consultant, that's the easiest one to answer.

I think that the experiments that have been done in the past in terms of fostering economic growth in specific targeted areas that have been categorized as depressed have, by and large, been successful. I think the amount of incentives that are necessary are so awesome that it would take a significant amount of money and it would take a very unique businessman who would be willing to invest under those conditions.

Representative SCHEUER. You know, we have a proposal in Congress now to provide some kind of tax exemptions, sort of a tax-free island. Can you give us your reaction to that proposal?

Mr. ADY. Well, I can tell you in terms of typical cost factors for manufacturing plants, taxes represent 2 percent of the total. So I wouldn't make a decision that you reduce that, you know, give me free taxes. I don't think it would sway my decision too much.

Mr. RASMUSSEN. If I could comment on that. The enterprise zone type proposals, by and large, are not going to change the location of industry among metropolitan areas. One thing that we do have, though, is substantial evidence—I shouldn't say "substantial"—rather, emerging evidence that tax differentials within a market

area—that is, within a metropolitan area—are really quite important in terms of the locational decision. Louisville just had, on the first of June, an enterprise zone named by the State of Kentucky. In that particular situation, the city is looking to retain firms that are already located in Louisville. But in the absence of some systematic attempt to keep them in the city, they would almost have to expand into suburban areas.

So in that limited context, these kinds of programs can work quite effectively. I would agree with the basic proposition, though, that targeting for distressed areas, given the magnitude of many of the problems in these areas, is not an effective way to stimulate economic development and economic growth in the country. I think that, inevitably, you have to say if you're going to go into depressed areas, what you're interested in is some notion of spatial equity, that you want to redistribute economic resources to the people living in that area.

And you might as well be explicit about that and not call it a national industry policy designed to facilitate economic growth.

On the other two questions you asked, the one being should industrial policy be targeted toward distressed industries, my reaction to that is no. I think if you target towards distressed industries, ultimately what you do is advertise to firms, sometimes badly managed, that what we're going to do is bail you out when things get messy. It seems to me what we did with Chrysler is the appropriate way—make it an ad hoc arrangement. If it's important to save those jobs and if there's a powerful political incentive to do so, then what you do is you extract a high price and make it uncertain from the point of other firms.

I don't think you want to help firms or encourage firms to be uncompetitive because they don't want to make the tough decisions to make themselves competitive.

And the third area with respect to high technology, I'm not sure that the Federal Government should emphasize that, either, for several reasons. The first is that there is enormous interest in private capital markets in high technology. You know private markets are picking those winners.

The second thing is, worldwide, we've got terrific interest in high technology and the competition is becoming increasingly fierce. There are probably increasing numbers of other industries which offer just as good, if not better, opportunities that we should focus on.

We have to remember that within any industry, you have a highly diverse group of firms and activities. For example, when we talk about the distressed steel industry, we really have to mention that we're talking about the big integrated mills that are distressed. Specialty steels are doing very well.

And so, it seems to me that we have to look for the opportunities where they exist and not think particularly in terms of focusing on high technology as a key ingredient.

As a result, I think the kinds of targeting that we have mentioned isn't as appropriate as a policy that tries to facilitate capital formation in general and reduces market imperfections of various sorts and needless regulations. But I don't think that the Government

should be involved in trying to target a particular area because if it did, it would almost surely pick one that's inappropriate.

Representative SCHEUER. You mean a particular geographic area or a particular area of industry?

Mr. RASMUSSEN. Either area, meaning any target being geographic or industry-specific.

Representative SCHEUER. We shouldn't go for winners or losers.

Mr. RASMUSSEN. That's correct.

Representative SCHEUER. Or depressed areas, for example.

Mr. RASMUSSEN. If the goal is to facilitate economic growth, yes.

Representative SCHEUER. Well, then, what do you do?

Mr. RASMUSSEN. The caveat I suggested for distressed areas——

Representative SCHEUER. You said in the very beginning you agreed that the policies that cities and States have been carrying on were comparatively ineffective because they didn't have any critera. Now you're telling me that if we have a Federal program, we still shouldn't have any criteria, that we should not have criteria that are industry-specific or criteria that is geography-specific.

Mr. RASMUSSEN. What I'm suggesting, which I believe is, I hope has been consistent throughout the morning, is that we should not be allocating capital, specifically. We should work on increasing supply of capital through tax policy, for example. We should be reducing barriers that prohibit businesses from expanding and so on. But we should not be allocating capital to winners or losers or over space. The capital markets, I think——

Representative SCHEUER. Do it better——

Mr. RASMUSSEN. Do a better job. The one exception I suggested is the small firms, where there is ample evidence that there is a capital market failure, a kind of capital market imperfection that results in small firms having less capital.

So we could usefully target more capital in that area, but otherwise, you want to create an environment for productive activity and not pick the winners, or whatever.

Representative SCHEUER. More capital to small firms, and I suppose you would also say not for just a couple of quarters or a year, but to give them time to flex their muscles and improve their product line and develop on some kind of a rational basis over middle and long term.

Mr. RASMUSSEN. Yes; absolutely.

Representative SCHEUER. I had the chance—I was a guest of the Japan Productivity Institute the summer before last with Senator Roth and Senator Hawkins. We met with the president of Yamasaki Machine Tools. They were making robots. They got their first loan through the good offices of MITI and they got a 10-year loan. They told the banks and told MITI that they didn't expect a profit in that 10-year period. And they said they didn't show a profit in that 10-year period. They made progress, but they never showed a profit. Nobody raised a problem. By the 11th or 12th year, they were just about breaking even. And by the 15th year, they were making out like gangbusters.

But that kind of thing would be very difficult to accomplish in the States, where bank managers and lending officers tend to want to know

what you're going to do in the last quarter of this year and the first quarter of next year.

Mr. RASMUSSEN. On that point, some of the State programs that are being founded now do offer medium- to long-term loans to small firms and also allow loans for working capital, which I think is an important ingredient in something like this.

Representative SCHEUER. Our small businesses—in fact, our high tech industry, is struggling very, very badly to meet the global competition of the Japanese, the Swiss, the Swedes, the Germans, and whatnot, in cars and high tech of various kinds.

Do you think that there's any role for the States to play in helping them become viable in global competition or is this perfectly obviously a role that only the Federal Government can play?

Mr. ADY. Well, my opinion is that it would probably not affect the big picture too much whether they did or not in terms of results.

I think, and Mr. Rasmussen mentioned before, that the private sector venture capital groups are pretty much in place. They're pretty sophisticated. They're able to function freely throughout the country.

State programs have been working toward a better rapport between university and manufacturer or a high tech firm which is very important. It's a very important role that they play because universities, especially land grant universities, traditionally have had very stringent policies on what professors could or couldn't do and for how long they could or couldn't do it and publishing rights and all that sort of thing.

Those have gradually been adjusted in many universities. I talked with Mr. Shapiro a couple of months ago from the University of Michigan, Ann Arbor, and they are taking a very aggressive role in helping to nurture and foster high tech growth at Ann Arbor. And I have heard as many as 86 companies, small high tech firms, have spun out from various programs at the university and from existing high tech firms in that area. And these pockets of concentrated high tech growth are springing up around the country. But a lot of it has to do with not only the venture capital aspect, but also the synergism with the university.

And that's usually, you know, the embryonic stage of a high tech company is one or two people, let's get started, and things spin and grow and expand. That has been the scenario.

Now, as the company develops, the second phase is where some troubles come in. You have a product that is viable, but you don't have a large market for it. You are sort of beyond the venture capital stage of financing and you're not yet to the investment banker stage where they're convinced that you really have something that's worth doing.

It seems to be at that point, if we're talking about capital formation, where there seems to be some difficulties at the present time. But I think that the investment banking community is moving into that area, and being willing to finance the second stage high tech firms to get over that hurdle, because now we're talking about moving out of the garage or moving out of the incubator building and actually putting up a facility.

The cost of these new facilities—we're working for a high tech firm now doing a study. They're going to employ 35 people and the investment is $100 million.

So when we talk about capital formation and when we talk about job creation, we're talking about a new breed of cat here. And that's why, when you mentioned before about the microelectronics group going down to Austin, the jobs and the capital—enough jobs just don't appear to be there to offset what has happened to some of our traditional manufacturing industries.

Representative SCHEUER. If you were a governor or mayor and you wanted to offset what has happened to our traditional smokestack industries, or even if you were a president, what would you do?

Mr. ADY. You're asking me that as an individual, right? [Laughter.]

Representative SCHEUER. Before a hearing of the Joint Economic Committee.

Mr. ADY. OK. I don't think I'd turn my back on them, as I think was suggested. I think that they need and deserve help and they are, to some extent, the backbone of the country. I would not like to think that, for the rest of my life or my children's lives that I would have to depend on steel imported from some place else. I think I'd like to have it right here at home.

Representative SCHEUER. Well, just for the purpose of discussion, let me tell you about the theory of comparative advantage.

Mr. ADY. I know it well.

Representative SCHEUER. We can make best. We've been dominating global competition for a hundred years making what we can do best and the rest of the world bought it, maybe not happily, but they bought it. And what we sell abroad is one out of every 3 acres sells food, raises food for sale abroad. Something like 20 or 30 percent of the total profits of our manufacturing industries is from sales abroad, 15 or 20 percent.

So, you know, that's a two-bladed knife.

Let's get away from the glittering generalities and the innocuous platitudes. What do we do about our smokestack industries. If we wanted to help, how could we help?

Mr. ADY. I think my recommendation would be to provide the funding and the capital for revitalizing those industries.

Representative SCHEUER. Giving them a modern plant and equipment for doing their research and development and providing them with the research and development funds.

Mr. ADY. Maybe, uh huh.

Representative SCHEUER. That they could have provided out of their own cash flow for the last 40 years but didn't.

Mr. ADY. Yes; right.

Representative SCHEUER. Invested in conglomerates abroad, bought oil companies, steel companies, buying oil companies.

Maybe we have to be philosophical and start out with a tabula rosa; is that what you're saying?

Mr. ADY. I——

Representative SCHEUER. It's a little bit tough, isn't it, on the 300,000 people in the automobile industry who have been disinvested out of their jobs, who have been wrong-decisioned out of their jobs? And they're off the payroll. But the guys who made those wrong

decisions are still drawing down their 6-figure salaries and if they aren't, they were handed a golden handshake or a golden parachute.

There's a little inequity there that bothers me. But you're saying that maybe we have to swallow that as a nation and get on with the job of helping those industries that engaged in wrong-headed policymaking, many, many decades and didn't do the R&D that they should have done and didn't invest in keeping that plant and equipment current. Maybe we have to forgive and forget and help them do the job now so that for the rest of our lives, we wouldn't be buying steel products from Germany and Japan and Sweden.

Mr. ADY. That's right.

Representative SCHEUER. And maybe Korea and Taiwan.

Mr. ADY. I agree with that statement. And I also think that when we talk about comparative advantage, you know, if you take that to the ultimate, maybe we should all be farmers because that's probably where we have our greatest comparative advantage in terms of feeding the world.

I don't think we want to do that. I think we have allowed these industries to, for many reasons—I think there's plenty of blame to go around beyond the managers of the companies.

But for one reason or another, we have allowed these industries to become noncompetitive. I think we have to admit to that and take corrective steps such as you're suggesting.

Representative SCHEUER. Are there any tax policies or antitrust policies or other national policies that you can think of that could be changed that would encourage companies—well, that would encourage people to save for investment and that would encourage companies to invest more in research and development and invest more in new plant and equipment, so that they could be competitive and they wouldn't have to come running to Congress to be wrapped in a cotton cocoon to protect them from foreign competition, at the cost of billions of dollars a year to American consumers?

Mr. RASMUSSEN. I think there's a slight background problem here in the sense that the demise of American industry is exaggerated. The real problem is that we have got a couple of key industries which are spacially concentrated in a few places and therefore, they've become really highly visible. And if we had sprinkled the auto industry around into little Geppetto-type operations in 3,000 counties, nobody would have cared. But the concentration is a big part of it.

Second, I think we're observing an industry that is relearning how to be competitive. And the market is forcing that. I think we're, in some sense, doing the right thing.

I think the third aspect we have to remember is that we have been in the midst of a very long, very difficult combination of structural transformation in the economy and a very deep business cycle. And that business cycle always hits those big industries the hardest. And, I think to a certain extent we are responding to the need to help these industries out of a business cycle problem, in part. It's not as bleak as, say, the last 3 years' experience would suggest.

So, in some sense, the problem is not as dire and consequently, the solutions that we seek don't have to be as dramatic.

Representative SCHEUER. Don't have to be as Draconian.

Mr. RASMUSSEN. Or as Draconian.

Representative SCHEUER. The patient certainly isn't better. I don't think any of us are writing off American business or the American free enterprise system. What you're saying, on the bottom line, is that market forces may be the best allocator of capital that we have been able to come up with and that there's not a hell of a lot of experience to prove that government bureaucrats at the Federal, State or local level, even when they're instructed by legislation to be risk-takers, do a very much better job than market forces can do.

I don't want to put words in your mouth.

Mr. ADY. I think you're right. And I think your example about the risk curve and how far up they are is not very far wrong. That's exactly right, and that there is a great concern for taking any kind of risks, mandated or not.

Representative SCHEUER. Yes.

Mr. ADY. Like you say, there's always a way to avoid making that decision.

Representative SCHEUER. We've had a little look-see at some of the results of the Reconstruction Finance Corporation headed up by Jesse Jones during sort of the middle phases of the Depression of the 1930's. And it looks as if they were beset by political pressures. They weren't very innovative. There were happenings then that would have been viewed today as graft and corruption. But under the very different mores of the time, they were accepted political pressures. But it doesn't seem to provide much of a model. I, frankly, don't know what kind of government intervention in displacing market forces does provide a model.

I know something about the FHA. When they just provide financing and look for nice suburban construction based on value, they do a very good job. When you ask the FHA to do another function based on social purposes, they're not very good risk-takers. They weren't trained for that. They weren't employed to do that.

Are there any other agencies that you know of that have done better in this field?

[No response.]

Representative SCHEUER. Mr. Rasmussen, your study of Federal industrial assistance programs concluded that the country's implicit policies toward industry "are targeted to the politically sensitive issues of economic equity and special interests, rather than economic growth and efficiency."

Are you trying to tell us that the collective impact of all of these policies either had no impact on our growth or was detrimental to economic growth?

Mr. RASMUSSEN. It's hard to tell whether or not programs targeted to stimulate agricultural output, for example, subsidies to minority groups, necessarily lower economic growth. They might have just displaced private capital, for example, and, in effect, contributed nothing. Whether or not they hurt or not I think goes beyond the descriptive study that we really did.

This is a major study done by several people at the Urban Institute and our conclusion is that there is no systematic orientation towards growth-including activities. And when things do get targeted, it certainly looks like there's more of a redistributive or politically sensitive orientation than a growth orientation.

Our experience is certainly consistent with your observation that government has a hard time ignoring those pressures.

Representative SCHEUER. And, in effect, you're saying that when we pass a lot of disparate policies that were pretty much done on an ad hoc basis and hadn't been integrated and were not done according to any very holistic view of the country's national economic needs, that they really don't have very much in the way of intended effects, not economic effects. Maybe redistributional effects, but not additive economic effects. Would that be a fair statement?

Mr. RASMUSSEN. Life always gets complicated. Think of maritime subsidies, for example.

Representative SCHEUER. I'd rather not. [Laughter.]

Mr. RASMUSSEN. Yes; well, from an economic point of——

Representative SCHEUER. I read a study some place that said that our subsidies, our subsidy program that flowed from the requirement that X-percent of all shipping be carried on American bottoms cost us $150,000 a year for every American job that was saved. It may have been a $20,000, $25,000, or $30,000 job.

But go ahead with your description of maritime subsidies.

Mr. RASMUSSEN. Well, you've done a much better job than I could have done in terms of the efficiency aspects. But then you've got rolling around other possible purposes besides the pure special interest of the maritime union. And that is——

Representative SCHEUER. Giving a guy a chance to get away from his wife for 3 or 4 months at a time.

Mr. RASMUSSEN. This is a private benefit as opposed to a social good, I believe. [Laughter.]

But there is the whole question of having adequate shipping capacity for various national defense needs. Generally, economists aren't fond of these kinds of subsidies and I share that lack of affection. But there is this other aspect out there—how does our shipping capacity compare with national defense needs and is this the cheapest way to get ample emergency capacity—you know, I don't know what you do with stuff like that, but I think that is the kind of thing that a study like this really can't touch on.

Representative SCHEUER. That's correct.

Mr. RASMUSSEN. And I don't know the answer to that kind of question. So there's other issues that, given other largely unstated purposes, maybe on net they're OK. But from pure economic efficiency, as you point out, they're a clear disaster.

Representative SCHEUER. Well, this has been an extremely interesting hearing. I thank you both for coming and for answering my questions so patiently.

Are there any further statements before closing?

[No response.]

Representative SCHEUER. All right. You have been two very stimulating and thoughtful witnesses and we all appreciate it very much.

Mr. RASMUSSEN. Thank you.

Mr. ADY. Thank you.

Representative SCHEUER. The committee stands in recess.

[Whereupon, at 11:20 a.m., the committee recessed, to reconvene at 9:30 a.m., Wednesday, July 20, 1983.]

INDUSTRIAL POLICY, ECONOMIC GROWTH AND THE COMPETITIVENESS OF U.S. INDUSTRY

WEDNESDAY, JULY 20, 1983

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to recess, at 9:30 a.m., in room SD-628, Dirksen Senate Office Building, Hon. Chalmers P. Wylie (member of the committee) presiding.

Present: Representatives Wylie, Holt, Lungren, and Snowe.

Also present: Charles H. Bradford, assistant director; and Mary E. Eccles and Robert Premus, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE WYLIE, PRESIDING

Representative WYLIE. The meeting of the Joint Economic Committee will please come to order.

This is the sixth and as of the moment the last of a series of hearings on the subject of industrial policy. Today we will examine the industrial policy, economic growth and the competitiveness of U.S. industry.

The American economy is undergoing dramatic changes. This is not a new phenomenon. We have seen our society change from an agricultural economy in its first century to a heavy industry-utility-transportation-dominated economy in the second century, and now we are witnessing a shift to a service-oriented, high-tech based economy.

The tremendous power of computers to store, retrieve, and transmit large quantities of data is transforming the American economic base. In manufacturing, computers are being linked to robots, fiber optics, lasers, numerically controlled tools, and other process technologies to raise productivity. The service industries, including banking, finance, and insurance, are using computer-based technologies to improve services and to remain competitive in national and international markets.

One consequence of an information-intensive economy is that manufacturing jobs continue to shrink as a percent of total employment while service and high-tech jobs expand. This has important social and public policy implications requiring an intelligent understanding of the phenomenon of structural unemployment and what to do about it.

The widespread use of information-age technologies holds the key to restoring the competitiveness of U.S. industries. In the process, old concepts about productivity, economic growth, and public policy must

be reexamined. Understanding the nature of the information economy, technical progress and demographic changes is important because they exert a powerful and significant influence over the behavior of the economy.

The structural shifts in the U.S. economy are not necessarily bad. They would be bad only if we fail to perceive them and to adjust to them. Government policies and business practices must be accommodative, not roadblocks, if we are to achieve the rising living standards these changes can bring.

The purpose of this Joint Economic Committee hearing, the sixth in a series on industrial policy, economic growth and competitiveness of U.S. industry, is to perceive the coming changes and to probe for answers to many of the questions about the information economy and its relationship to U.S. productivity and economic growth.

One of the questions that comes to my mind as a Congressman from a heavy industry State is, will smokestack industries participate in the high-tech changes, or will they be left in the dust? This and other pertinent questions will be raised at the hearing this morning.

I want to welcome the witnesses. Our first witness this morning will be Congressman Ed Zschau from California.

Congressman Zschau is from the so-called Silicon Valley, California's 12th Congressional District. He came to Congress this year from the computer industry and also from the Stanford Business School where he served as a professor. He can give us many insights as a businessman, an academician, and as a politician; he wears three hats here this morning.

Congressman Zschau, we welcome you to the hearings this morning and thank you for taking your time to make the contribution to them.

Your statement will be made a part of the record and you may proceed in your own manner at this time.

STATEMENT OF HON. ED ZSCHAU, A U.S. REPRESENTATIVE IN CONGRESS FROM THE 12TH CONGRESSIONAL DISTRICT OF THE STATE OF CALIFORNIA

Representative ZSCHAU. Thank you very much, Congressman Wylie. Good morning to you and good morning, Congresswoman Holt.

I am delighted to have the chance to appear before the committee and share some of my ideas related to the issues that you just raised.

I am here, in particular, to suggest an industrial policy to maintain U.S. technological leadership. Certainly there are other objectives that are appropriate for an industrial policy, but technology has had a history of contributing to growth and productivity in jobs in the past, and therefore I feel that it is worthy of some special treatment.

To provide a little background about the perspective that I come from, as you mentioned, Congressman Wylie, I come out of the high-tech industry. I founded a company about 14 years ago in the electronics industry in the Silicon Valley area. Silicon Valley constitutes a good share of my congressional district, which contains about 700 high technology companies.

The area was the birthplace of the vacuum tube way back in the early part of this century, radar, integrated circuits, microprocessors,

personal computers, and, most recently, genetic engineering. So it has had a history of growth in the various technologies as time has passed.

Before I focus on my suggestions for industrial policy, I would like to begin by addressing the role of technology in our economy.

I have heard statements by some people and read articles that technology is posing a threat to jobs, that as technology advances we will lose jobs or those jobs that are left will be less interesting than they have been in the past. My feeling is that the threat is not technology; the threat is not change in processes or products or markets; rather the threat is lack of change. That is, if we don't maintain our leadership in technology, if we don't push forward the frontier of new ideas, if we lose our technological leadership, then this country will become uncompetitive in world markets and we'll lose jobs through the loss of tehnological leadership.

On the other hand, high technology is certainly not the panacea for all of our economic ills. I've read other articles that say we are going to become a high-tech country and that's where we ought to be putting our resources. Let us forget about those so-called smokestack industries that occupy your district, Congressman Wylie. I don't think that the numbers add up. I think that kind of thinking is Pollyanna thinking.

If you look at the electronics industry that I came out of, for example, even though it has had remarkable growth, it only employs 2 million people in the United States today. There are estimates that through the rest of this decade high technology will only create about 1.4 million new jobs, hardly enough to make up for the jobs that would be lost if we write off our more mature industries.

Frankly, my approach, and I think the proper approach, in my opinion, is, sure, we'll have jobs created out of technology, but in addition we have to apply technology to our more mature industries, to use innovative processes in order to make the so-called smokestack industries competitive in world markets and retain those jobs that are currently there.

The use of technology may cause a change in the type of jobs, but we can't write off the durable goods industries, the steel industries, the automobile industries, and so forth.

What is the proper role of Government in promoting high technology? There are some who feel that we ought to have some sort of centralized planning, some sort of high-tech planning board along the lines of what they might imagine MITI, the Ministry of International Trade and Industry, in Japan would do, to pick winners and losers, to identify and target on technologies or industries, products, or companies. My feeling is that that approach is doomed to failure in this country. I can't think of any group less qualified to pick winners than a group of bureaucrats in Washington, D.C. As a matter of fact, my colleagues in the venture capital industry who make their living trying to identify emerging companies in technology say that if they pick 1 or 2 out of 10 that are successful they consider themselves fortunate, and they have their personal wealth on the line and are personally involved in the technologies on a day-to-day basis.

I don't think that centralized planning or a high-tech planning board is the answer. But I don't feel that we can ignore technology

either; that is, a laissez-faire approach is not appropriate either. I believe some sort of Government targeting is required.

But rather than targeting the technologies or targeting industries, I feel our Government targeting should be to target the process of innovation; that is, to take those actions that create an environment in which new ideas, innovation, new technologies are likely to flourish.

Based upon my experience in high technology and my analysis of the industry, I have identified four prerequisites that I think are critical for innovation to take place.

The four prerequisites are No. 1, a commitment to basic research in the country to provide a foundation for future products;

No. 2, incentives for risk takers, the investors, the entrepreneurs, the innovators, the companies that have to explore new ideas;

No. 3, an adequate supply of trained technical people;

And No. 4, ample opportunities, market opportunities, both domestic and foreign.

My feeling is that the proper industrial policy is to make sure these prerequisites, the conditions for innovation, remain and avoid those actions that will weaken these prerequisites.

The specific legislative or regulatory items will change over time. It depends on the situation.

But let me make some specific suggestions about how this industrial policy would suggest specific legislative initiatives in 1983.

First, a commitment to basic research.

We have seen recently a drawing back from a commitment in research in Federal funding of basic research, the kind of research that wouldn't be done if the Federal Government wouldn't do it, particularly in the area of commercial medical, or nonmilitary oriented research.

My feeling is that even though we are spending over $40 billion of government money on R&D a year, too much of it is linked directly to weapons systems; not enough of it is in the basic research area, the sort of research, for example, in DNA that was done at Stanford and Berkeley that resulted in a whole new industry some years later, the genetic engineering industry.

Another example. Today we are being challenged by Japan who is committed to a fifth-generation computer project. A proper response in my opinion is twofold from our government.

First, to have a government funded R&D program in advanced computer concepts. That is currently being planned under the Advanced Research Projects agency of the DOD.

But in addition there is another legislative initiative that I think would foster this kind of basic research, and that is a modification in our antitrust laws that would permit corporations to form research and development joint ventures to pursue those projects that are either too expensive or too risky for any single company to form and pursue alone. Currently antitrust law makes such business combinations risky at best, and when they have been tried there have been threats of lawsuits.

I feel that this would not only help high technology, but it may be a way for the smokestack industries to form research joint ventures to pursue common problems, to pursue new processes in the steel industry,

to pursue methods of a fuel efficient car or environmental control apparatus for the car, to pursue common problems that take the results of that research and compete individually in the world market.

The second prerequisite—incentives for risk takers.

We have some good history on that, Congressman Wylie. In 1978 the Congress substantially reduced the tax on capital gains in order to stimulate risk capital investment. It has had a dramatic effect. Risk capital had almost dried up during the mid-1970's, but since that tax rate was cut from nearly 50 percent to 28 percent, and more recently to 20 percent, there has been an outpouring of venture capital that has enabled many young companies to get started and grow.

In 1981 Congress passed the R&D tax credit, a 25-percent tax credit on research and development expenditure increases by corporations. But Congress only made it temporary. And frankly, when you have a long term R&D project a temporary tax credit isn't going to be the kind of motivator that's needed. We ought to make that tax credit permanent.

What about personnel? The availability of trained personnel is an important prerequisite for innovation, and frankly, we are going to be facing a scarcity. The American Electronics Association estimates that over the next 5 years we will be short 90,000 electrical engineers and computer scientists unless we can increase the capacity of our engineering programs in this country.

This is a problem that is caused by a lack of money. We can't pay the faculty enough—they are attracted by high salaries in industry; equipment is expensive to train engineers. But it is also a problem that the private sector has a deep interest in. If there aren't enough engineers, there aren't enough people to do the work in the companies.

So already the private sector companies have banded together to form some funds that contribute money to colleges and universities.

But I think in addition we have to explore some tax incentives for contributions to the teaching activities of engineering schools that are contributions not only of equipment, but also of money to help augment faculty salaries.

Finally, Congressman Wylie, market opportunities. We can have research, we can have incentives, we can have people, but if there are no market opportunities, technology isn't going to advance, so people aren't going to take the risks associated with new ideas. To me this means an aggressive trade policy to negotiate away the barriers that have been put up in other countries, maintaining incentives for exporting, such as the Domestic International Sales Corporation, making sure that in the rewrite of the Export Administration Act that we are keeping in mind the needs to promote exports of high technology products, and, of course, we have to look to our own domestic economy as well.

My own personal feeling is that unless we are able to reduce substantially the very significant projected Federal deficits, the current economic recovery that we are experiencing is going to sputter in the next 12 months.

In summary, Congressman Wylie, let me just conclude by saying high technology has a role to play in our continued economic growth, but it is not the panacea. It is able, however, to not only create jobs

in the industry itself, but also make our more mature industries more competitive.

I feel that government has a role to play in promoting our technological leadership. Our proper industrial policy, however, is rather than targeting on specific industries or specific technologies, to target on this process of innovation, to make sure that we have a commitment to basic research, to make sure that we have the incentives for the risk takers, to make sure that our education system is turning out an adequate supply of trained technical people, and finally, to make sure that market opportunities, both domestic and foreign, are significant and expanding so that the risks associated with technological innovation will be pursued.

I thank you very much, Congressman Wylie, for having the chance to share these ideas with you and the committee, and I would be delighted to answer any questions that you might have.

[The prepared statement of Representative Zschau follows:]

PREPARED STATEMENT OF HON. ED ZSCHAU

An Industrial Policy to Maintain U.S. Technological Leadership

Mr. Chairman, I appreciate the opportunity to appear before this distingushed committee to suggest an industrial policy to maintain U.S. technological leadership. Although achieving technological advances is certainly not the only objective for a proper industrial policy, I believe it is sufficiently important for industrial competitiveness, economic growth, and jobs to warrant special attention.

There are some who suggest that rapid technological advances could cause the loss of jobs and make those that are left less interesting. Those modern day Luddites warn us that technology is a threat to employment opportunities and our quality of life that must be countered by government actions. Such is the thrust of their industrial policy suggestions.

Mr. Chairman, I submit that the threat to jobs is not technological change. Neither is the threat changes in manufacturing processes, products, or markets. The threat to this Nation's economy and our quality of life is the lack of change. The threat is lack of competitiveness and growth. The real threat is losing our technological leadership.

Earlier this year, on a beautiful clear Friday evening, my wife and I had the privilege of attending a reception given by Her Majesty, Queen Elizabeth, aboard the royal yacht Britannia docked in San Francisco Bay. During a brief conversation, the Queen, who had just completed a visit to my congressional district, often called "Silicon Valley", asked me a most provocative question. . . to which I did not have an equally provocative answer. She asked, "Why are there so many high technology companies in Silicon Valley?"

The Queen's question is being asked frequently these days because the San Francisco Bay area -- particularly the Santa Clara Valley -- has becomed synonymous around the world with high technology. And rightly so.

It was there that the Varian Brothers developed the klystron tube that provided the initial technological foundation for radar and microwave communications.

It was there that two young Stanford graduates -- Bill Hewlett and Dave Packard -- encouraged by their Stanford professor Frederick Terman -- started a business making electronic instruments in a Palo Alto garage. . . a business that has grown into a world-renowned electronics company with sales last year of $4.2 billion and employing 69,000 people.

It was there that Nobel Laureate William Shockley, co-inventor of the transistor at Bell Labs, established Shockley Labs to exploit the transistor invention.

It was there that one of Shockley's bright, young researchers, Bob Noyce, invented the integrated circuit and co-founded the integrated circuit manufacturing company which later became Fairchild Semiconductor, the patriarch of the many integrated circuit companies which have given Silicon Valley its name.

It was there that Bob Noyce and several of his colleagues from Fairchild founded Intel, the first manufacturer of a commercial microprocessor -- a computer on a chip -- which has brought the power of computer technology into the homes, appliances, cars, and pockets of people throughout the world.

It was there that a group of hobbyists formed the Home Brew Computer Club rigging together microprocessors and household T.V. sets to make their own "personal" computers.

It was there that the personal computer concept was commercialized by two young entrepreneurs, Steve Wozniack and Steve Jobs, who founded Apple Computer and launched a revolution that resulted in the computer being selected Man of the Year by Time magazine.

And Silicon Valley's high tech accomplishments are not just limited to electronics.

For example, it was there at Stanford University that basic research into the mysteries of DNA contributed to the development of genetic engineering technology, a technology that has given rise to many new companies, resulted in

unique products such as synthetic human insulin, and which has applications that could be as pervasive in the future as computers are today.

These are but a few of the many technological advances made in Silicon Valley. The area was also the birthplace of video ganes, non-stop computers, small disk drives, gas laser products, heat resistent tiles for the space shuttle, and electronic reading devices for the blind. Overall, there are about 700 high technology firms in and around my Congressional distict.

As provocative as the Queen's question was -- "Why are there so many high-tech firms in Silicon Valley?" -- there is a related question which is far more crucial for us to answer these days. That question is, "How can we keep technology advancing, not just in Silicon Valley, but all across America?"

U.S. TECHNOLOGICAL LEADERSHIP HAS BEEN CRITICAL TO ECONOMIC GROWTH AND JOBS

Mr. Chairman, over the past several years, a variety of studies have documented the importance of technological innovation to our economic growth, productivity, job opportunities, and trade competitiveness. A study by the Massachusetts Institute of Technology estimated that 80 percent of the growth of the GNP of the United States between 1909 and 1949 was due to technological change. Further, a recent Brookings Institution study determined that more than one-half of the productivity increases in the United States between 1948 and 1969 were the direct result of technological innovation. In recent years, while the

overall export performance of the United States has been mediocre, export of research and development-intensive products have shown excellent growth. From 1960 to 1979, these industries increased their export surplus from $5.9 billion to $29.3 billion. During the same period the trade balance of industries without technological bases declined from near zero to a negative $16.5 billion. It's clear that our technological leadership in the past has enabled the United States to create many new jobs to employ our growing work force.

U.S. TECHNOLOGICAL LEADERSHIP IS BEING CHALLENGED FROM ABROAD

On January 25, 1983, President Reagan in his State of the Union message announced that "This Administration is committed to keeping America the technological leader of the world now and into the 21st century." This commitment by the President to spur technology may have come just in the nick of time. U.S. technological leadership has eroded in recent years. It hasn't been squandered like some other resources through overuse and waste. It's been frittered away through neglect.

Over the past 20 years, research and development expenditures as a percent of gross national product have declined in the United States. During the same period our two most aggressive trading partners -- Japan and West Germany -- were increasing their expenditures.

With the decreasing intensity of our reseach efforts, it is not surprising that our leadership in technical

contributions has fallen as well. In the 1950's, the United States was credited with 80 percent of the major inventions made during that period. During the 1970's, our share of major inventions dropped to 60 percent.

Due to the oustanding past performance of America's high technology industries, plus the growing recognition that our leadership in technology is being challenged from foreign competitors, high technology is receiving considerable attention in Congress these days. In the first months of 1983, more than one hundred bills to promote high technology have been introduced.

HIGH TECHNOLOGY CAN CREATE JOBS AND IT CAN SAVE EVEN MORE BY MAKING MATURE INDUSTRIES COMPETITIVE

While it is reassuring that high technology is finally getting proper attention, all this new-found enthusiasm may be a mixed blessing. Many of those who have jumped on the high technology bandwagon have been exaggerating its capabilities for restoring our economic growth. They suggest, for example, that high technology can create enough jobs to replace all those that are being lost in our so-called "smokestack" industries.

Such claims smack of Pollyanna thinking. The numbers just don't add up. The high tech industries, although their job creation record is outstanding, still represent only a small part of America's jobs today. It's estimated that 1.4 million new high tech jobs will be created over this decade. While that's excellent growth, it's certainly not enough to replace all the jobs that would be lost if the older industries were allowed to deteriorate.

We simply can't write off the mature industries, nor should we. There's plenty of opportunity in those businesses yet. The demand for steel, automobiles, and durable goods isn't vanishing. We've just been losing market share. Rather than abandoning those industries, we need to make them more competitive .

Recently, President Reagan announced the formation of a Presidential Commission on Industrial Competitiveness. It will be chaired by one of my Silicon Valley constituents, John Young, President of the Hewlett-Packard Company. The objective of the Commission is to determine how the United States can improve its competitiveness and world market share in not only those industries, such as high technology, where we are currently competitive, but also in those so-called "smokestack" industries where we have been losing our competitive edge.

I believe that the ailing companies in our mature industries can be rejuvenated. I believe that application of technology and new approaches to those industries will play a major role in making them more competitive. In fact, it may be the only way for these companies to become competitive again and save their jobs.

CENTRAL PLANNING WITH GOVERNMENT FINANCING ISN'T THE PROPER APPROACH

In its enthusiasm to help high technology, Congress must avoid the temptation of legislating direct government involvement. We can't afford to let the helping hand of government "strike" high tech the way it struck agriculture or energy. We should have learned our lessons. Still some

suggest we should have some sort of High Technology Planning Board which would pick those technologies and industries that it feels have the most promise and "target" them with subsidies and other special treatment.

Although this proposal is patterned after the way the Ministry of International Trade and Industry in Japan is imagined to work, I believe such a scheme would be doomed to failure. Bureaucrats in Washington, D.C. shouldn't be given the job of picking between opportunities and dead ends. Politics would undoubtedly play a major role in their decisions. Besides, it's hard enough to make these decisions for those investors or managers on the firing line who have much to gain or lose personally. Even the most successful venture capital investors say that they expect only one or two real successes out of every ten investments. Clearly, government "targeting" of this kind isn't the answer.

On the other hand, we can't deny that government should play a positive role in promoting high technology. I believe that its proper role involves a "targeting" of a different kind.

WE NEED AN INDUSTRIAL POLICY THAT "TARGETS" THE PROCESS OF INNOVATION

Rather than "targeting" specific technologies or industries, the proper role for government is to <u>target the process</u> by which they are developed -- the process of innovation. That is, our government should focus on creating an environment in this country in which high technology, innovation, new ideas, and new companies are

likely to flourish. Making sure that such an environment exists is the best way to help America maintain its technological leadership.

Based on my personal experiences and my analysis of the Silicon Valley phenomenon, I believe there are four conditions needed for an environment that promotes technological innovation:

* A strong commitment to basic research, deepening and broadening our understanding of the fundamental processes that will form the basis for industries and products in the future;
* Incentives for investors, entrepreneurs and innovators to provide the capital and take the personal risks associated with the development of new companies and new products;
* A strong educational capability, particularly in the sciences, that assures an ample quantity of trained technical and managerial personnel and a broad base of technically literate citizens who can deal with the challenges of a high technology world;
* Expanding market opportunities, domestic and foreign, which requires a healthy economic environment and aggressive trade policies.

A proper high technology industrial policy is one that focuses on these prerequisites for innovation. It consists of specific legislative and regulatory initiatives that foster these conditions and avoid government actions that would weaken them.

Although the specific legislative and regulative initiatives needed will change over time, here's the outline of a legislative agenda that Congress should pursue now:

WE NEED A STRONG COMMITMENT TO BASIC RESEARCH.

We must renew our commitment to basic research. The federal government must increase -- not decrease -- its funding of research carried out in universities and research laboratories. The truly basic research -- such as the study of DNA that resulted in genetic engineering technology -- won't be pursued by the private sector. Funding such research is a proper role for government.

Over the next decade, America's dominance in the computer industry will be challenged from abroad. The challenge comes from Japan. In 1981, after three years of extensive planning, the Japanese government announced a national project designed to make Japan number one in the computer industry by the late 1990's. It's a project to develop a 5th Generation Computer -- a machine so advanced in hardware and software that it can reason with knowledge like a human being rather than just compute data or process information. The Japanese research program, involving several companies and co-ordinated by the government, will cost a total of a billion dollars over ten years.

We should respond to the Japanese challenge in two ways: Start our own federal R&D project for advanced computer design and encourage research collaboration by U.S. companies.

The federal R&D program for advanced computer design is now being planned. It's being organized under the DOD's Advanced Research Projects Agency which has an outstanding record in computer research, including the development of

timesharing, computer networking, and artificial intelligence. A Silicon Valley researcher, Lynn Conway from the Xerox Research Center, has been named to lead this critical project.

In addition to funding basic research, we need to alter our antitrust laws to permit the establishment of multi-corporate research joint ventures that would enable U.S. companies to pool their research resources and share in the results that are produced. There is legislation currently before the Congress that would, under certain conditions, permit such research joint ventures to be formed without the threat of antitrust suits. MCC - a research joint venture to develop advanced computer systems - was formed recently without benefit of such legislation and was immediately threatened with a law suit by an enterprising private attorney. Taking the antitrust risk out of the formation of research joint ventures would permit our high technology companies to compete more effectively against the consortiums that have long been encouraged in other countries. In addition, removing the antitrust risk may be what's needed to get the companies in the ailing "smokestack" industries to work together to solve their common problems and become more competitive in world markets.

WE NEED INCENTIVES FOR THE RISK TAKERS

In addition to basic research, we need incentives for the risk takers ... the investors, entrepreneurs, inventors, and enterprises who must take the risks of pursuing new ideas. Here, tax policy has a significant role to play.

The reduction of the capital gains tax rate, passed by Congress in 1978, illustrates the enormous impact that tax policy can have on the availability of risk capital for the financing of new ventures. In 1978, the maximum tax rate on capital gains was reduced from nearly 50 percent to 28 percent. In the eight years prior to 1978, when the tax rate was at the higher level, less than $50 million per year in new capital was made available to venture capital funds investing in small companies. However, within eighteen months after the tax rate was lowered, $1 billion in new capital was made available to such funds. In 1982, $1.7 billion of new venture capital was provided.

The results of the 1978 capital gains tax reduction show the power of tax policy in improving the incentives for investing in new technology companies. We should preserve and enhance such tax incentives for risk capital investment.

In addition to tax policy, regulations also impact capital formation for high technology companies. Currently we have restrictions that curb the amounts that pension funds, including IRA's, can invest in high growth companies. Although regulations that prevent fiscal mismanagement and speculation are appropriate, such restrictions on pension funds prevent those immense pools of capital from being used to their fullest extent to finance the growth of technology enterprises. They should be made more flexible.

In addition to incentives for investors, we need incentives for corporate risk taking. The Economic Recovery Tax Act of 1981 contained such an incentive. It provided for a 25 percent tax credit on <u>increases</u> in research and

development expenditures. This tax credit was an excellent idea. It appears already to have had a positive effect on R&D expenditures. Although the R&D credit was only partially phased-in in 1981 and 1982, the McGraw-Hill annual R&D survey shows that despite the severe recession there was a significant increase in R&D expenditures during these years, making this the first post-war recession in which the pace of research spending increased.

Although the R&D tax credit can be an important incentive, the restrictions that were placed on it by Congress have prevented it from being as effective as it should be. Most importantly, the tax credit is only temporary. It expires in 1986. However, since most R&D projects are long-term in nature, a temporary R&D tax credit can't provide the kind of incentive needed for long range projects. Congress needs to pass legislation this year to make the R&D tax credit permanent. In addition, it should make sure that regulations for the R&D credit are written broadly enough to cover software development which is becoming a most significant part of most advanced computer system development projects.

WE NEED AN ADEQUATE SUPPLY OF TRAINED TECHNICAL PEOPLE

Besides basic research and incentives for risk-takers, we must insure that there is an adequate supply of trained technical people. This is a critical problem that has only recently been recognized. The future demand for engineers and technicians is predicted to far outstrip the supply. The American Electronics Association has forecast an annual shortfall of 16,000 electrical engineers and computer scientists through 1987 -- that's a total of 90,000 unfilled technical positions in five years.

The scarcity of trained technical people will put us at a severe competitive disadvantage in world markets. Japan, for example, is graduating on a per capita basis twice as many engineers per year as we are. Of course, the Japanese are no match for us when it comes to lawyers and accountants. Out of every 10,000 citizens, the U.S. has 20 lawyers and 40 accountants while the Japanese have only 1 lawyer and 3 accountants.

The basic constraint to providing efficient technical education is a lack of money. The cost of educating technical people, particularly engineers, is very high, and it's difficult to attract enough qualified professors because industrial salaries are so attractive. Currently, there are more than 2,000 unfilled faculty positions in the engineering departments of colleges and universities in America causing us to turn away about 75 percent of the student applicants.

I believe private industry has an important role to play in providing the funding for increased technical education programs. The American electronics Association and the Massachusetts High Technology Council, for example, have already established industrial giving programs to collect money from corporations and use it to fund college faculty salaries and equipment.

The federal government has a role to play too. By offering tax credits and enhanced deductions for corporate contributions of cash and equipment to colleges and universities for <u>teaching</u> activities, as well as research, we can encourage private sector support to increase the

capacity of our technical education facilities without requiring a new federal bureaucracy to carry it out. There is currently legislation before Congress which would provide the proper kinds of incentives to increase the funding of our technical education facilities.

As an aside, we should also make sure that our immigration policy recognizes our need for trained technical people. In particular, since a high percentage -- 30% to 50% -- of graduate engineering students are foreign nationals, such students who develop technical skills in this country should be permitted to remain here. The immigration reform legislation currently making its way through Congress should recognize this need, rather than requiring such students to return to their home countries after receiving their education here.

WE NEED EXPANDING DOMESTIC AND FOREIGN MARKET OPPORTUNITIES

Finally, in addition to needing a research base, incentives for risk-taking, and trained technical personnel, technological innovation won't occur unless there are attractive business opportunities. We need a strong domestic economy and access to foreign markets. Government plays an important role in ensuring both.

Specifically, this country must pursue an aggressive trade policy aimed at achieving free and <u>fair</u> trade. We should negotiate in a tough minded fashion to break down the trade barriers erected by our trading partners. Also, we should maintain tax incentives (such as the Domestic International Sales Corporation that permits the deferral of

taxes on profits from export sales) that encourage and help finance exports. Finally, we should focus and streamline our export controls on high tech products so we can prevent trade-related transfer of militarily critical technologies while, at the same time, making exporting easier for U.S. companies.

Above all, high technology enterprises, as well as all businesses, can only achieve their potential within a good economic climate. That means we must have lower interest rates and low inflation. People are unwilling to make investments, to make long-term commitments, or to borrow the funds needed for expansion in a climate of high interest rates and inflation. We must reduce significantly the substantial projected federal budget deficits for the next several years in order to remove the upward pressure on interest rates and inflation. I believe this means a monetary policy that accomodates economic growth, a tax policy that encourages savings and investment, and the discipline needed to sharply curtail the growth of government spending. If we don't reduce federal deficits, I fear that our current economic recovery will be choked off and new technical developments will perish with it.

* * * * * * * * * * *

Mr. Chairman, high technology is perhaps our most valuable national resource. We must preserve it. However, innovation can't be forced. It can only be fostered. It is fostered by creating an environment that emphasizes freedom of scientific and industrial activities and that offers incentives to the innovators, entrepreneurs and investors

who have the talent and resources to advance technology. It is fostered by a strong base of fundamental technology and by a population that is well educated in science and its application. It is fostered in a healthy economic environment and by trade policies that provide expanding opportunities for our technological products. Promoting such an environment should be the primary objective of America's industrial policy.

24-862 O - 83 - 12

Representative WYLIE. Thank you very much, Congressman Zschau, for that excellent statement.

As a Member of Congress for several terms now, my mail has increased enormously in the 17 years I've been here. It seems to me that indicates that people care more about conveying and seeking information from us as Members of Congress than perhaps they did in earlier days. Maybe that's a trend all through our society.

Access to information, of course, has been key throughout American history. Samuel Slater memorized the engineering plans for a textile mill in 18th century England and brought the embargoed information to the United States to start our industrial revolution. That's the way the story goes at least. Then Andrew Carnegie worked as a young man on a relay station for telegraphic transfers where he transmitted buy and sell orders for steel, and with that specialized information he was able to launch his great career.

Ironically, it seems to me there is a sense, therefore in which the U.S. steel industry and today's smokestack industries have their origin in the information industry. It seems to me as if there might be a tie-in there.

You mentioned the importance of the smokestack industries and the fact that we can't turn our back on them in this process of going to new technology. We may need them later. But maybe there is a tie-in between the information industry that we are talking about today and trying to see that the smokestack industries are and remain important in our society. I think I heard that coming through in your testimony.

There is a general agreement that transforming our industrial base will require large-scale retraining programs, and from your perspective as a professor and being a part of this industry, do you see this taking place primarily in public schools or in the private sector or as a combination of the two?

Representative ZSCHAU. The history in our country when changes have occurred in the requirements for jobs is that the various institutions already in place were able to respond to the challenge of retraining. As people came off the farms and went into industry they were trained to do the industrial jobs.

I'm concerned about the discussions that have been initiated about the retraining problem. I think that they may be putting the cart before the horse. That is, I feel that it is important to make sure that we have the growth in employment opportunities first and understand where they are coming from before we again detail plans about how to transfer people from one skill to another skill. I think it would be a tragic mistake to anticipate that growth would come, for example, in word processing, train many people to do word processing and then be wrong and have a number of people whose hopes for employment are dashed by the realities that the growth is coming from some other area.

So I guess my feeling, Congressman Wylie, would be to make sure that we have an industrial policy that creates the growth. As that growth occurs and we understand it, then we can better figure out how to do the training. But I would not want to put the cart before the horse.

Representative WYLIE. Thank you.

Congresswoman Holt.

Representative HOLT. Thank you, Congressman Wylie.

Congressman Zschau, we are certainly glad to have you here as a witness this morning. It was an excellent statement.

I am bothered by the same point that Congressman Wylie made: this training and retraining, are we going to do it publicly or privately? You say we need an industrial policy that targets the process of innovation. We heard testimony the other day about the Japanese system of training people completely before they get into the job market, industry doing that, and then one industry falls short of the need for people they are moved to another industry and retrained there. It wasn't clear whether it's industry that does that or government that does it. But it seems to me that that's an excellent approach to it—i don't know how we could do it in this country where we have such a separation, but it seems to me that that would be an excellent area for us to try to concentrate—to get industry to train people for the jobs that they are going to need. I think that we can move in that direction.

Representative ZSCHAU. May I make a comment on that. Congresswoman Holt?

Representative HOLT. Please do.

Representative ZSCHAU. I have had the opportunity to be in Japan about 25 times. My company had a joint venture with a Japanese company, and although I focused on the activities of the joint venture, I did get a little feeling for the way in which they do business.

In a Japanese company a young engineer or someone who perhaps has no college education comes into the company and views the company as his or her career. That is, rather than thinking of himself, for example, as an engineer he thinks of himself as an employee of Fujitsu. Whatever that company assigns that person, that employee, to do, that person will do. It may turn out he starts in engineering and they need him in marketing, and so he goes to marketing, but he may not have the background in marketing. Then they train him to do that. The industry trains the people to do the work that they see that needs to be done.

It is very similar here in the United States. My company would train employees to do the work that we had to do. Some of our work was specialized. Obviously, we like to bring in people, if it's an engineering job, who have an engineering background. But the specifics of the jobs and the changing needs, particularly of a rapidly growing company, were met by internal training programs. I feel that that is an activity that will continue because the industry, after all, needs to have the employees to do the job. They can't depend upon government to provide them the trained employes; they have to provide the training themselves.

Representative WYLIE. Would the gentlewoman yield?

Representative HOLT. Yes.

Representative WYLIE. Can we depend on the colleges to pick the winners among those who are most likely to succeed in this new field? Or do we depend on industry? Or is it a combination of both?

Representative ZSCHAU. The colleges have have a responsibility to provide basic education in the various disciplines. They do a self-selecting process or a selecting process so that the students that are coming

out of colleges have been selected to be able to do the work and then they have been provided with basic education.

I guess I would hate to see the colleges trying to anticipate what specific job needs there are going to be and then gearing their programs to the very narrow skills of those jobs as opposed to giving a broad base of education.

If you take me as an example, this is the third career that I've tried to be successful at. I've been a professor, I've been a businessman, and now a politician. It is hard to anticipate when you start out in college or a career where you are going to go, and I would hate to see the colleges trying to anticipate that and focus very narrowly. I would prefer to see colleges give a broader education and industry give the more specific education needed to do the job.

Representative HOLT. You mentioned the need to provide ample risk capital for today's advanced technology companies, and you also mentioned that you were involved in a joint venture with the Japanese. A lot of their risk capital is coming from our country with these ventures. What can we do to improve the availability of capital in this country?

Representative ZSCHAU. We took, as I mentioned, a major step forward, a dramatic step forward in 1978, reducing the capital gains tax. Just to give you a feeling for the impact of that, in the 8-year period during which the capital gains tax maximum rate was 50 percent there was about $50 million per year of new venture capital being made available to young companies. Within 18 months after the tax rate was lowered, $1 billion of new venture capital was made available. Last year it was $1.7 billion. By orders of magnitude, it changed the availability of capital.

The reason I had a joint venture in Japan during the 1970's was because of the scarcity of risk capital in this country. I was selling technology to the Japanese in order to get money just to meet my payroll. But with the new climate that has been created by the reduction in the capital gains tax, companies are not having to sell their technology abroad anymore.

What should we be doing as far as the future is concerned? Resist any efforts to go back and to turn the clock back and increase the tax on capital gains. If anything, I think it could be reduced still further to create incentives for investment.

Representative HOLT. Thank you, Congressman Zschau.

Thank you, Congressman Wylie.

Representative WYLIE. Thank you very much, Congressman Zschau. Your testimony has been very articulate and impressive. You have demonstrated a considerable amount of expertise on this subject and have made a real contribution to our hearing. We thank you.

Representative ZSCHAU. Thank you, Congressman Wylie.

Representative WYLIE. Next we will hear from a panel of four witnesses.

Mr. Naisbitt is the author, of course, of the best seller, "Megatrends," a nonfiction book which I skim read over the evening. I found it very interesting. He is also head of his own consulting firm in Washington.

Mr. Leveson is director of economic studies at the Hudson Institute and was an associate of the late Herman Kahn, and the author of

several books and articles on future trends in the United States and world economies.

And then from the world of business we will have Mr. Walter Chambers, president of the Ohio Co., a major investment banking firm, and Mr. John Fisher, who is the senior vice president of Banc One Corp., Ohio's largest commercial bank holding company. These highly respected businessmen can give us some practical explanations of the changes which are taking place in business practices and what this requires in the way of changes in public policy to accommodate the changes in our society.

With that, Mr. Naisbitt, would you please proceed with your testimony.

STATEMENT OF JOHN NAISBITT, AUTHOR OF "MEGATRENDS" AND CHAIRMAN, NAISBITT GROUP, WASHINGTON, D.C.

Mr. NAISBITT. Thank you, Congressman Wylie, and thank you for the opportunity to be here this morning.

I think there are seven considerations at least that we have to deal with to understand the period that we are in, and I should like to just quickly go through those.

The first is that the United States is not in a recession; the United States has not been in a recession. What is going on in this country is much more important, what's going on in the United States is much more profound. We are, of course, changing economies, and we haven't done that for 150 years when we last changed from an agricultural to an industrial, and now we are changing from an industrial to an information/electronics economy.

To put it very simple-mindedly, I suppose, we are right in the middle and perhaps beyond the middle of shifting from an economy that rests on the motor car to an economy that rests on the computer.

The second consideration is that as we shift into an information economy almost all the new jobs are being created by entrepreneurs rather than large companies. There is an entrepreneurial explosion, which I think is really exciting in this country. The numbers are stunning. At the height of the industrial period in 1950 we were creating new jobs at the rate of about 93,000 a year. Last year, 1982, we created more than 600,000 new jobs.

We are such a society of events that we hardly notice the process that is going on underneath. We read, for example, that last week there were 730-odd bankruptcies, the greatest number since the Great Depression. The context for that, however, is that last week we created more than seven times more companies than we did even at the height of the industrial period.

I might also add, Congressman Wylie, that the last time there was an entrepreneurial explosion was, of course, the last time we changed economies from an agricultural to an industrial. But this time around there is something new about it, and that's women. As many as a third of the new companies being created in the United States are being created by women, and it is just these young, new companies that are creating almost all of the wealth-creating capacity and the new jobs.

We also should be mindful that we are entering into a long shakeout period, and we will see thousands of computer companies, thousands of software companies and cable companies go under, because that's part of the process, and we have only to reflect on the beginning of this century when we started to make automobiles. We created hundreds and hundreds of automobile companies, and in the end, after the long shakeout period we ended up with just a handful.

Given the nature and the character of the new economy, we will end with thousands of companies, but we will go through thousands to do that as we go through the shakeout period, and also, the shakeout period in the old industrial economy will continue as companies contract and merge and so forth.

I just want to add, as I did parenthetically in my summary, that to understand what is going on we have got to create new indices, new concepts and new data, and that's partly why our economists have served us so poorly recently, because their judgments continue to be rooted in the old industrial society that we are leaving behind, and we've got to really get a sense of the new information electronics economy.

As if it weren't enough that we're shifting from one economy to another, we're also shifting from a self-contained national economy to part of a truly global economy.

Here I am not talking about just more trade; I'm talking about going from a collection of national economies that traded with each other to a single, unified global economy, and, of course, we are able to do that because of simultaneously shared information because of those satellites we have up there.

As part of all of this, moving to a global economy, all of the highly developed countries on the globe are de-industrializing. All of them. It's clear when we look at England, that great negative example for us, that they are de-industrializing, and I think it is getting clearer that we are de-industrializing. But even Japan is moving out of steel and automobiles and so on because Japan knows, as we should, that the Third World is increasingly taking over these tasks and by the year 2000, just 16½ years away, as much as a third of the world's manufactured goods will be manufactured in the Third World.

There are a great many things to be said about the global economy, but I should like to just say one more thing, and that is I think it is our great hope for world peace, perhaps our only hope for world peace as we get so economically interdependent, so economically interlaced that we will not, as it were, bomb ourselves. It is moving in that direction if we would only let it happen.

Fourth of the considerations, the new economy is a decentralized economy, and that's been going on for a couple of decades, and we are moving back in this vast country of ours to a more natural condition of being decentralized and diversified.

Historically, there were two events that centralized us. First, the Great Depression and our response to that, and second, World War II and our necessarily centralized response to that, plus, perhaps even more importantly, the incredible centralizing impact of industrialization. And now we are receding from these influences as we go back to this more natural condition of being decentralized, and it is at least

in that regard that I say that Ronald Reagan is clearly riding the horse in the direction the horse has been going; namely, out of Washington.

Fifth, in the new economy we are shifting from industrial help to self-help. After World War II, in the 1950's, we sort of turned our souls over to the corporations, our health over to the medical establishment, our kids over to the schools, and our welfare over to the Government. Now, we are well into a process of reclamining all of the above in a move to a kind of old-fashioned self-reliance.

Sixth, while there are opportunities, and there will be many opportunities in the new economy in all parts of the country, most of the action will take place in just three megastates. I sometimes advise some of my clients to take on an FTC policy—Florida, Texas, and California. In just those three States as much as 65 percent of the economic growth momentum is occurring and a population growth is occurring.

In "Megatrends" I talked about the restructuring of America, north to south, and that's really kind of a shorthand. It's really to the Southwest and Florida, not to the South. And by the Southwest I mean that Southwest quadrant of the United States. If you draw a line across the top of California, the top of Nevada, the top of Utah, the top of Colorado, drop down and pick up Texas, that Southwest quadrant plus Florida is accounting for about 85 percent of the population growth momentum in this country and about 85 percent of the economic growth momentum in this country.

If you doubt that, look at the U.S. Census Bureau report of just 2 months ago. In their sampling for the years 1981 and 1982 they found that this country grew by 5 million and reported that 92 percent of that occurred in the South and the West.

There is incredible momentum there. What is occurring is that the ground for economic development competition is shifting from infrastructure to ambience, from infrastructure to quality of life. During the long industrial period when we wanted to locate a facility somewhere we looked to the infrastructure; we looked to the transportation and the water and the natural resources. In the new economy, with the kinds of companies we have, we can locate those companies anywhere we want to.

So rather than look for the infrastructure, we look for the quality of life, we look for the good climate, we look for the good schools, we look for the cultural offerings.

It's going to be very difficult for those cities of the Midwest, the old industrial cities in the Midwest and Northeast to compete in this shift from infrastructure to quality of life.

Also, I might say that it's kind of an old-fashioned industrial idea for a city, a location, a State to woo a large corporation and say put one of your plants in our back yard. Those large corporations are not creating the new jobs. Very few of them are building plants. The jobs are being created by these young companies. So I think the economic strategy that is appropriate today is to create an environment that is nourishing for entrepreneurs.

Last, in the new economy we are going to use less energy. Most miss the point that in moving away from the industrial base, we're moving away from an energy-intensive industrial base. Last year, for the first time in the history of the United States, we used less electri-

city than the year before; last year, for the fourth consecutive year, we used less oil than the year before. Put together, the receding of the energy-thirsty industrial base with the conservation that is going on, with the alternative energy sources being created, I think that adds up to no energy crisis in the new economy.

Thank you very very much, Congressman Wylie, for the opportunity to be here.

[The prepared statement of Mr. Naisbitt follows:]

PREPARED STATEMENT OF JOHN NAISBITT

There are seven considerations I think are essential to understanding the period we are in:

1. We have not been in a recession. What is occuring is much more important, much more profound. We are right in the middle of changing economies. What's happening in the U.S. today has not happened for 150 years, the last time we changed economies (from agricultural to industrial). We are, of course, shifting from an industrial-based economy to an information/electronics-based economy; from an economy that rested on the motor car to an economy that rests on the computer.

2. In the shift to an information economy, almost all of the new jobs and wealth-creating capacity will be created by entrepreneurs--not large corporations. And there will be a long shake-out period as we witness thousands of computer, software, and cable companies come and go. We only have to reflect on how during the first half of this century we created hundreds and hundreds of automobile companies during a long shake-out period that ended with only a handful of automobile companies. The nature and character of the new economy is such that we will end up with thousands of information/electronic companies, but we will have to go through thousands of companies to get there. (To understand what is going on, we will have to create new economic concepts, indicies, and data. To continue to rely on the old industrial indicies, as most economists do, is to mislead ourselves).

3. We are also shifting from a national economy to part of a truly global economy (not merely more trade among nations, but one single global economy). As part of this shift, the world is in the process of re-sorting out who is going to make what--a redistribution of labor and production. And as part of that process, all highly developed nations are de-industrializing--even Japan. The U.S. and all developed countries are (and have been

for a long time) in the process of losing the steel, automobile, machinery, textile, petrochemical (etc.) industries, as third world countries increasingly take up these old industrial tasks. By the year 2000--just 16½ years away, as much as 30 percent of the world's manufactured goods will be manufactured by third world countries. There is much to be said about the new global economy; but let me say just one more thing. It is our great hope--perhaps our only hope--for world peace. We are moving in the direction of becoming so economically inter-laced that we will not, as it were, bomb ourselves, if we will only let it happen.

4. The new economy is a decentralized economy as America shifts from a centralized society to a decentralized society. We are returning to our more natural condition. Historically, there were two events that centralized the U.S. First, the great depression and our response to it; then World War II and our necessarily centralized repsonse. Perhaps even more important was the incredible centralizing impact of industrialization. Now we are receding from these centralizing influences and continue the decentralization that has been going on for about a decade and a half. That's why I say that Ronald Reagan is riding the horse in the direction the horse has been going--out of Washington.

5. In the new economy, there is a shift from institutional-help to self-help. After World War II, in the 50's, we sort of turned our souls over to the corporations, our health to the medical establishment, our children to the schools, and our welfare to the government. We are now in the process of reclaiming all of these as we move back to an old-fashioned self-reliance.

6. While there are opportunities in the new economy in all parts of the country, most of the action will be in the three megastates of Florida, Texas, and California. As much as 65 percent of the population growth momentum and the economic growth momentum is taking place in just those three states. I've talked about the restructuring of America, North to South. That is just the shorthand. It is really to the Southwest and Florida. Not the South. If you draw a line across the top of California, the top of Nevada, the top of Utah and Colorado, and then drop down and pick up Texas--that Southwest quadrant plus Florida accounts for as much as 85 percent of the population growth momentum in the U.S. today. In the new economy the ground for economic development competition has shifted from infrastructure to ambience, to quality of life. During the long industrial period, when we wanted to locate a facility somewhere, we looked to the infrastructure, the transportation, water, natural resources. In the new information-electronic economy, where we can locate a facility anywhere we want to, we look not for the infrastructure, but for the quality of life, good climate, good schools and the like. Also, it is an old industrial idea to woo a big

company to get it to locate a plant in your city. Big companies are creating no new jobs to speak of, and are building very few plants or other facilities. The new strategy in the competition for economic development should be to create nourishing environments for entrepreneurs who are creating almost all the new jobs (see point #2). In this shift from infrastructure to ambience, it is going to be very difficult for the old industrial cities of the Midwest and Northeast to compete.

7. Lastly, the new economy will use less energy. Most missed the point that in moving away from our industrial base, we were moving away from an energy-intensive industrial base which has been using about a fourth of our energy supply. Last year, for the first time in U.S. history, we used less electricity than the year before. Last year, for the fourth consecutive year, we used less oil than the year before. Couple the continued decline of the energy-thirsty industrial base with the continued push for conservation of energy and alternative energy sources, and I think that adds up to no energy crisis in the new economy.

Representative WYLIE. Thank you very much, Mr. Naisbitt, for your excellent statement.

Mr. Leveson, your excellent statement has already been made a part of the record, so you may summarize it in your own way.

STATEMENT OF IRVING LEVESON, DIRECTOR, ECONOMIC STUDIES, HUDSON INSTITUTE, NEW YORK, N.Y.

Mr. LEVESON. Thank you, Congressman Wylie. I am delighted to be here.

The United States is engulfed in a new wave of technological change and innovation. That wave has many dimensions, including developments in materials, biotechnologies, and other areas.

The earliest stages of the new wave of technology are dominated by developments in computers and telecommunications.

Developments in computers and telecommunications are creating a far more flexible economic structure, breaking down traditional boundaries between markets and products and introducing enormous competition and flexibility into the economic system.

One of the greatest sources of competition and innovation is the nature of the technologies themselves. In the past we've seen the creation of large-scale systems, such as integrated steel mills designed to achieve economies of scale. Today many technologies are evolving in decentralized form under the impetus of distributed computing. This enhances innovation and competition by allowing new varieties and by encouraging competition among geographic areas.

Today, efficiency is increasing in the system itself rather than in single large facilities. One important exception is telecommunications where large-scale systems are very important but also promote tremendous competition and flexibility by allowing geographic areas to compete in a wide range of applications.

One of the most important phenomena caused by this information explosion is the development of programmed human capital. Today, rather than just having human capital in the form of knowledge achieved through formal education or on-the-job learning, we create and store knowledge in the form of computer programs, in the form of video tape and disk systems, data bases, and make that information widely available throughout the world to people who are not required to know very much about the equipment, the programing, or even the specific skills that are incorporated in the equipment, but rather can access it with much less knowledge.

So we have a huge store of human capital in a new form which has tremendously powerful effects on economic growth comparable or even greater than the effects of increases in formal years of schooling in the past.

We also are in a position to benefit enormously from the evolution of a global technology market. The United States is now actively importing technology at a time when other countries increasingly are bearing their fair share of the costs of research and development.

This flexible economy has enormous measurement problems: We miss some of the salient features of output; we understate output

growth; we overstate price growth; we find it increasingly difficult to define or measure industries, occupations, cities, or even in what locations economic activity takes place.

This new flexible economy requires far more decentralized decisionmaking. We need more decentralized decisionmaking to respond to the rapid pace of change, to take advantage of decentralized technologies, to make decisions in an environment where centralized data may be less revealing than on-the-scene information, and to operate when a regulatory system no longer provides the nice, neat boundaries that were designed for another era.

The flexible environment of an information economy calls not only for reduced structural regulation, but also for greater privatization. The private sector has shown itself far better than the public sector in responding to new conditions, in placing emphasis on efficiency without politicization, and in keeping up with new technologies.

This issue has recently come to a head in discussion over the adequacy of federally funded R&D centers. I suggest that we have been too slow in this country in creating incentives within the R&D structure itself and in reallocating R&D resources.

The solution to the problem of bureaucratization of R&D is to allow more autonomy to federally funded research centers and recipients of research grants—I'm talking about scientific grants, and that's not the business I'm in—and place a larger share of funds through more autonomous channels. At the same time we must actively support a high level of basic research and associated training in our universities and more carefully reallocate funds from overworked application areas to new opportunities.

There is considerable misunderstanding about the job-creating potential of these developments. History has shown that productivity growth raises demands and creates new products for which there are demands as well as by increasing incomes. The result is that there is no long-term rising trend in unemployment. The information revolution will not destroy more jobs than it creates. It will create many new jobs in manufacturing, distribution, servicing the equipment, and in applications.

It is also not true that the new technologies will raise the level of sophistication of society and wipe out the more routine jobs in a way that will create a permanent underclass that is unable to cope with the new demands.

New technologies have shown themselves capable of greatly simplifying tasks, so that even though there is a continuing trend toward sophistication there are new jobs which do not eliminate the potential for workers with less skill. Moreover, the history of technology in this country, a tribute to our society, has been that we have been able to upgrade the capabilities of our citizens at the same time as we upgrade our production and distribution systems.

We are, as you mentioned, evolving into a service economy as well as an information economy. Both paradigms are useful and overlapping.

The developments which we are talking about today are not limited to goods-producing industries. Technological change is happening very rapidly in the services industries, and the service industries have emerged as leading industries in U.S. economic growth.

It is essential in this environment that we not tax or otherwise impede service industries in the name of carrying out activities intended to support the goods-producing sector.

Even more critical is that we avoid taxing successful firms and industries in order to bring up the rear. It is essential that we allow, as Congressman Zschau emphasized, full rein for the dynamic sectors to create new jobs, raise incomes, and develop opportunities to bring displaced workers into the mainstream of economic life, rather than once again creating an artificial class of dependent citizens through Government programs which reduce self-help and individual initiative.

In this connection, it is essential that we encourage the private sector to take on additional responsibilities for worker adjustment. To an important extent that has been happening already, but I think that there are ways we could encourage it. One way is to work with firms and see what kinds of assistance can be provided for specific programs where workers are being transferred within the firm.

Finally, I would emphasize that we must be sure that we do not become so resistant to change or impatient with its demands that we kill the golden goose. The information economy will offer many opportunities if we are patient enough to let it flourish.

[The prepared statement of Mr. Leveson follows:]

Prepared Statement of Irving Leveson

The United States is engulfed in a new wave of technological change and innovation. This wave of technology can be expected to last for decades. Moreover, it may emerge as almost "permanent". The nation has institutionalized its processes of research and development and of applying technology to the development of production methods and products. Moreover, world economic development has produced an international market for technology that enables the U.S. to benefit by importing technology from other nations which increasingly bear a full share of development costs. Domestic and international activities in technology development and application are linked through a sophisticated system of licensing and co-production arrangements which facilitates the sharing of knowledge and speeds the spread of new techniques and applications.

The new wave of technologies has many dimensions: computers, telecommunications, new materials, biotechnologies and many others. One area after another promises the creation of vast new industries and the transformation of the economic landscape. Moreover, these technologies are rapidly converging in combinations that produce new advances and applications. The convergence of technology, while so many technological advances are taking place, creates a potential for progress that is enormous, at a time when some question whether an affluent society will do little more than spend its expertise on minor conveniences and frivolous pursuits.

The earliest stages of the new wave of technology are dominated by developments in computers and telecommunications. While these represent enhancements of trends long in place, this progress on top of a strong economic and technological base provides the impetus for changes which are far-reaching.

Developments in computers and telecommuncations are creating a far more flexible economic structure. They are breaking down traditional boundaries between markets and products and introducing enormous competition and flexibility into the economic system. The development of a fluid economy is enhanced by the evolution of competing modes among the technologies themselves, such as in the competition between telephone, cable and direct broadcast systems, between central and distributed computing, and among devices with computing capabilities.

One of the greatest sources of competition and innovation is in the nature of the technologies themselves. While the advance of technology in the past has often led to the creation of large scale systems, such as integrated steel mills designed to achieve economies of scale, today,

many technologies are evolving in decentralized form under the impetus of distributed computing. This enhances innovation and competition by allowing new varieties and by encouraging competition among geographic areas. Telecommunications systems, while often large scale, also facilitate competition because they make geography more fluid, linking up remote locations at low cost and high speed. One only needs to ask 800 number operators in what city they are located to appreciate this phenomenon. Today the efficiency is increasingly in the system rather than the large facility, as the growth of networking in financial services illustrates.

The development of an information economy is enhanced by the degree to which the information technologies mold human capital into new forms. Society's knowledge can by stored in the form of computer programs, video disk and tape, and various other forms. The nation's expertise can be made available widely through computer and telecommunication systems and other information devices. Users need not know how the equipment works, how the programs work, or how to create the knowledge which is stored within them. This massive amount of programmed human capital is having an impact on today's generation which is equal to or greater than that which increases in a number of formal years of schooling had on generations of the past.

At the same time as we are rapidly developing an information economy, we are becoming a more mature service economy. Service industries are benefiting from the application of modern technologies for computing, communications, and other purposes and from the application of modern management techniques. With the development of a modern service sector, service industries are becoming leaders in economic growth. The paradigms of information and service economy overlap and both have value depending on whether one is primarily interested in the nature of the product or the nature of the production system.

The flexible economy which is developing has enormous measurement problems. Many of the features of output are not reflected in our measures. This leads to understatement of growth of output and productivity and to overstatement of price increases. Our measures of industrial stucture, industry classification, occupation, city and the location of activity are becoming removed from what is actually taking place. In this environment we need to rely on a much richer mix of information--from aggregate data systems, disaggregated data bases, conceptual frameworks, formal models, experience of persons specializing in particular areas, field observation, case studies, and other sources, in order to understand what is really going on.

The new flexible economy requires far more decentralized decision-making than the economic system of most of the postwar period. Decentralized decision-making is essential for economic actors, 1) to respond to the rapid pace of change, 2) to take advantage of decentralized technologies 3) to make decisions in an environment when centralized data may be less revealing than on the scene information, and 4) to operate when a regulatory system no longer provides the nice neat boundaries that were designed for another era.

The flexible environment of an information economy calls not only for reduced structural regulation, but also for greater privatization. The private sector, while not always quick on its feet, has shown itself far better than the public sector in responding to new conditions, in placing emphasis on efficiency without politicization, and in keeping up with new technologies.

The problems of goverment production have recently come to a head in questions raised over the efficiency of government R&D. Public and publically funded R&D has been too slow to reallocate resources, to take advantage of new technologies or to deal with new problems in areas such as energy, environment and international competition. Bureaucratic impediments affecting the salary structure, advancement and other incentives, as well as excessively cumbersome committee systems for making allocation decisions, have placed government research and development at a disadvantage. Moveover these same processes have had a significant influence on private research and development, with the result that bureaucratization has reduced many of the benefits which large commitments of dollars might have been able to yield. If government R&D converts innovators into bureaucrats, it will have done a great disservice to the industrial progress of this nation.

The solution to the problem of bureaucratization of R&D is to allow more automony to federally funded research centers and recipients of research grants, and place a larger share of funds through the more autonomous channels. At the same time we must actively support a high level of basic research and associated training in our universities, and more carefully reallocate funds from overworked application areas to new opportunities.

There is considerable misunderstanding about the job-creating potential of these developments. A great many adjustments certainly will be required as new industries replace old ones and new skills are demanded in different firms, occupations and locations. But we must not make the mistake of assuming that there will be fewer jobs as a result of technological progress. History has shown that there is no long term rising trend in unemployment. Increases in productivity raise incomes and add to purchasing power and new products lead to additional demands. In the process, new jobs are created in manufacturing, distribution, repair, and a host of support activities. This is evident today with the growth of telephone stores, cable installers, computer stores, office equipment repair people, programmers, training facilities, and so many other new vehicles for employment. The information revolution will not destroy more jobs than it creates.

It is also not true that the new technologies raise the level of sophistication of society and at the same time wipe out the more routine jobs, creating a permanent underclass that is unable to cope with the new demands. Progress has enabled our nation to upgrade the capabilities of its citizens so that there can be greater fulfillment of personal goals, at the same time as individuals respond to the challenges which

a changing society creates. Moreover many new technologies simplify tasks so that less capable citizens benefit and can be employed in jobs which allow them to remain productive. The new technologies will not create a permanent underclass that is unable to cope.

There is also an occasional misunderstanding about the importance of progress in the service industries relative to goods producing-industries. The new technologies are simply not a goods sector phenomenon. Research and development activities of the IBM's were always carried out with the understanding that there would be major markets in banks, insurance companies, hospitals and other service organizations. Rapidly growing employment in high technology fields is as much a service sector phenomenon as a phenomenon of goods-producing industries.

In this environment it is essential that we not tax service industries, on the basis of some theory that says that they are unproductive, in order to support activities of the goods-producing sector.

It is especially critical that we avoid taxing successful firms and industries in order to bring up the rear. There will be many problems of social adjustment and some will go beyond those which society expects to be dealt with on an individual level. Some problems will go beyond those which existing social support systems can be expected to handle. But it is essential that we allow full reign for the dynamic sectors to create new jobs, raise incomes and develop opportunities to bring displaced workers into the mainstream of economic life, rather than to once again creating an artificial class of dependent citizens through government programs which reduce self help and individual initiative.

The government role in assisting and retraining can be important, but much of that training should be done by the private sector without direct government involvement. Where intervention occurs, financial assistance can be given to individuals who choose what kind of training to get and where to get it in a competitive market.

It is essential that we encourage the private sector to take on additional responsibilities for worker adjustment. This has been happening already. Large firms have shown increasing willingness to transfer workers rather than to lay them off, to provide orientation and training, to assure continuation of benefits and even to continue employment that is not immediately necessary for the firm. A growing number of firms recognize the importance of continuity in a generation of workers which has shown a strong desire for continuity and job stability. Firms recognize the extent to which investments in worker adjustment can improve morale by assuring other workers that their efforts with the company will not be forgotten. Government assistance in this process needs to be carried out without intruding so much as to lose the advantages which people on the scene who know their businesses bring to worker adjustment processes.

In this time of rapid technological change, it is tempting for political leaders to jump on the bandwagon and create programs which will allow them to take credit for the progress which is at hand. We

must be very careful that these efforts do not go so far as to become a source of impediment to that very progress. We must be sure that we do not become so resistant to change or impatient with its demands that we kill the golden goose. The information economy will offer many opportunities if we are patient enough to let it flourish.

Representative WYLIE. Thank you very much, Mr. Leveson. We appreciate your excellent statement.

Next we will hear from Mr. John Fisher, who is a businessman from Columbus, Ohio. He has been in the forefront of the information economy for some time through his work for Banc One in processing Visa cards.

Mr. Fisher, we are glad you made the considerable effort to get back from Europe where you were making your knowledge more widely available, as Mr. Leveson suggested.

Welcome to the hearings this morning. You may proceed in your own way.

STATEMENT OF JOHN F. FISHER, SENIOR VICE PRESIDENT, BANC ONE CORP., COLUMBUS, OHIO

Mr. FISHER. Thank you very much, Congressman Wylie, ladies and gentlemen of this joint committee.

I appreciate the opportunity to comment upon the high-tech developments now visible in the banking industry in the hope that these observations may be helpful in the establishment of our Nation's industrial policy goals.

I am always pleased to take the flight from Columbus to Washington, for it gives me an opportunity to once again observe the eastern Ohio and Pennsylvania landscape sliding under the wing some 30,000 feet below. That view, which I'm certain most of you in this room have shared, prompts me to recall a scene from an evening that took place around my family supper table almost 50 years ago.

I was growing up in eastern Ohio and can recall my father that evening describing an event that had taken place that day in our town. I think the date was 1936. My father had talked to a man that day in our town who had just driven the first 22 miles of the Pennsylvania Turnpike that eventually stretched from Irwin to Carlisle. It was America's first super' ighway and was to become the progenitor of the over 50,000 miles of the highway system that ribbon our country today.

I can recall my dad describing the obvious thrill of being able to travel, at a mile a minute, without the interruption of a red light or without ever facing an oncoming car, or hay wagon, I might add.

I know my dad must have asked the question of my mother, "Do you think we'll ever be able to drive over to your mother's place without having to stop?" And, of course, the answer would have been, "Not until we get a car," because it would be several years before we were able to afford that convenience.

I recall this story for you this morning because I believe our society is poised to accept, over the next 20 years, a technological advance equal to the success of the automobile over the past 50 years. I am talking about the home automation phenomenon that is being readied to spring full born into our society.

During the balance of this century, the consumer will become the operator of information networks destined to bring increased convenience and timely information needed in a sophisticated society, and to deliver services at a lower cost than the distribution systems we have have today. The home will be the end point of these information networks.

The Pennsylvania Turnpike of 50 years ago will begin this September in Miami, Fla., in the form of our country's first significant commercial application of VIDEOTEX technology, the divided superhighway of home automation and information systems of our future.

Clearly, your previous hearings on the social information revolution in our country, in the world to be factual, are most proper and certainly timely. My comments are restricted to only one facet of that revolution—VIDEOTEX; and concern themselves with only one industry affected by that revolution—banking.

My comments about the ribbon cutting event this September in Miami refer to the Knight-Ridder developed VIEWTRON project which will be launched in 5,000 homes in the Miami-Ft. Lauderdale area. The project has been in development for almost 3 years and, as a joint effort with AT&T, now American Bell, will become the progenitor of numerous similar home information services destined to emerge throughout our country.

Before I get too far down the superhighway, let me be certain you are familiar with the Pennsylvania Turnpike of the future.

VIDEOTEX is a computer technology invented in England in the mid-1970's that links a television set to the ordinary telephone and permits the user, with a single keyboard, to display information in text and graphic form on demand. Due primarily to government support, the technology has been spreading rapidly throughout Europe and in Canada, where major projects are currently being implemented, most noteworthy of which is in France, the intention being for the French Government by 1992 to provide a VIDEOTEX terminal free of charge to every homeowner in France.

The unique aspects of this technology set it aside from other home information and entertainment developments. These include:

VIDEOTEX promises to be easy to use; not much more difficult really than a telephone or a television set. This is not a computer, although the terminal does have limited intelligence and many of the screen displays provide much of the data we normally associate with personal computers. Sure, the personal computer can be used, but the typical terminal is linked to the existing TV set, is activated by a simple hunt-and-peck keyboard, and requires no unusual data processing ability. Grandma will like VIDEOTEX just like she liked uninterrupted highways.

VIDEOTEX is going to be low cost. The service will cost a little more than what we today pay for a home delivered, monthly newspaper and the terminal will be priced in the neighborhood of what we today pay for a microwave oven. The total monthly cost, as the marketplace begins to accept this new phenomenon, will be less than $50. As an aside, if this new opportunity to provide virtually unlimited information isn't worth that fee, then I think we should forget it and go invent some other socially beneficial system, such as fix the streets, repair the bridges, or cure cancer.

VIDEOTEX will introduce a low cost advertising and product information service that will enable comparative and convenient shopping from the home. In the home automation future promised by VIDEOTEX, the consumer can display the weekend lawnmower spe-

cials, as an example, from various advertisers, read the product description, compare price and value, and finally place the order to have the item shipped after entering the debit or credit card number to be used to pay for the merchandise.

And now you see I have finally come to the banking involvement in this remarkable development, for clearly one of the requirements of home automation will be to provide the consumer with access to the funds networks and the financial industry from a home terminal.

Following the first home banking experimental work with VIDEOTEX in 1980, conducted by our holding company, called Channel 2000, and the Southeast Banking Corporation of Florida, our two organizations, along with the Wachovia Corporation of North Carolina and the Security Pacific Group of California, have just recently announced the formation of VIDEOFINANCIAL SERVICES, a joint venture data processing organization with the corporate intentions of providing home banking services to the depository industry throughout the developing VIDEOTEX networks.

The prototype of this national concept will be introduced in connection with the Knight-Ridder VIEWTRON project scheduled for this September, which I mentioned previously.

Additional plans suggest VIDEOFINANCIAL will be installing numerous data processing centers around the country to interconnect the banks, saying and loans, and credit unions into the local and regional VIDEOTEX information networks.

Initially, our banking systems will permit the consumer to electronically pay bills, eliminating the writing and mailing of paper checks, access virtually all data from up to eight different accounts, or display the current bank statement, which will include a listing of checks and deposits that cleared the previous night. Eventually, the service will be expanded to include budgeting and financial planning and a comparative listing among local financial organizations of the interest rates paid on deposits and charged on loans that day.

These banking services are only a small but important part of this massive data base being developed by network operators.

These developing networks are being organized principally around the publishing industry and, in addition to Knight-Ridder, are being formed by Times Mirror in California, CBS in New York, Continental Telephone of Atlanta, and Keycom of Chicago, a joint venture of Field Enterprises, Honeywell, and Central Telephone.

Significant research and development funds have already been spent by these and other corporations in our country to begin assembling the technical, marketing management skills necessary to introduce this important aspect of the information society.

Due to the significant up-front development costs, joint ventures within the publishing industry are becoming quite commonplace. Between Knight-Ridder and Times Mirror alone, over 25 major city newspapers have already announced their intentions to introduce electronic informational services using VIDEOTEX technology within the next few years. Three of these network operators have targeted this immediate market for introduction of this new technology soon after the midpart of this decade.

If you subscribe to the promised social movement toward an information age that is being discussed at this joint committee, then clearly

you can also visualize the significant and beneficial aspects of the VIDEOTEX phenomenon as it emerges during the balance of the century.

There are at least two areas of potential governmental involvement that I wish to bring to your attention. These areas are in addition to the urging that enterprise and entrepreneurship be encouraged and not hindered by unnecessary regulation, a continuing concern within my industry.

The first area of potential governmental involvement is in the area of security and privacy, privacy of the proprietary data, especially individual financial data. If home automation is to be publicly accepted, it will be necessary for the financial industry to assure the consumer that data is secure from unwanted access.

To that end, and in preparation for the September launch of VIEWTRON in south Florida, VIDEOFINANCIAL SERVICES worked with Knight-Ridder and American Bell to develop an encryption capability that scrambles all financial data between the home and the bank computer systems and, therefore, prohibits the unwanted access of this data. We believe this data encryption standard, DES, as it is commonly known, should be encouraged of all vendors, domestic and foreign.

In the same area of concern, I want to note for you that our society, as home information systems expand, will need a superior method of identification in order to gain access to the network and then in turn the selected computer files available over those networks. The code number of PIN, personal identification number, that we commonly use today will not be sufficient in the future. Our society will need a more reliable, more convenient and low-cost method of individual identification. Governmental support, in the form of research and development grants, for instance, or such similar procedures, could be used to encourage further refinement of voice prints, signature dynamics and other technologies that promise a more reliable and acceptable identification system in the future.

The second, and my final suggestion for potential governmental involvement, is in the area of public education in the acceptance and usage of these new information tools. Much of the previous testimony heard by this joint committee has dealt with the need to increase the computer and terminal literacy of our society. It seems proper for a government to support and continue contributing to the general public's awakening and usage of these new system, just as it was the role of our public organizations to train and educate most of today's automobile drivers in the usage of that machine back in the Pennsylvania Turnpike days.

I have visualized a central physical complex that draws together the research and development activities and the public information and educational systems that would serve as a clearing house of ideas and events surrounding this home automation phenomenon. This could act as an international facility designed to stimulate innovation and creation from the vendors of the world, and as a consumer center with the aim of enhancing the social benefits from usage of these systems.

Clearly such a complex could become the engine of the home automation phenomenon, just as the Silicon Valley powers our high-tech

developments of today, as the New England rivers powered the Industrial Revolution 200 years ago, Congressman Wylie, that you previously mentioned.

I hope it is proper and not overly bold to suggest that our city, Columbus, could be the proper site of such a facility that would draw together the skills and talents to mature the fledgling information industry. Certainly, as the home of several important creators of this new era, such as Compu-Serve, one of two of the Nation's most important information networks today; OCLC, the most important computer driven library service in our country today; Battelle, one of the world's leading basic research organizations; Ohio State University and Chemical Abstracts, we have already stepped across the threshold into tomorrow.

I have thought many times how valuable that old and virtually unused Ohio State Penitentiary site could become were it to be razed or converted to a complex for tomorrow, serving as a catalyst and a research center for the home automation phenomenon. And only because I am unable to pass up this opportunity, I have suggested that, since he was an inmate in that location almost a hundred years ago, that such a center could be named after O'Henry and therefore would be known as the O'Henry Complex. Like most of his famous short stories, maybe the facility therefore would produce an unexpected and memorable ending, potentially even helping to create this new kind of Pennsylvania Turnpike of the future, one that carries the information requirements of our society.

I urge this joint committee to be imaginative in their support and guidance in this worthwhile adventure.

Thank you very much.

Representative WYLIE. It sounds like a good idea to me, Mr. Fisher.

Thank you very much for your fascinating and mind-boggling statement. I can understand why your services are in demand.

We will next hear from another good friend from Columbus, Mr. Walt Chambers, who is one of the real experts in the field of the securities industry. And, of course, record keeping and funds transfers vis-a-vis the information economy is also very important to you. Mr. Chambers is a leader in his field. We will be glad to hear from you now and thank you also for the considerable effort you made to get here this morning. I understand your plane was a little late, which is always frustrating.

Welcome to the hearings, Mr. Chambers. You may proceed in your own manner.

STATEMENT OF WALTER R. CHAMBERS, EXECUTIVE VICE PRESIDENT, THE OHIO COMPANY, COLUMBUS, OHIO

Mr. CHAMBERS. Thank you, Congressman Wylie and members of the committee. Technological change has still not prevented mechanical difficulties that change airline schedules, I guess.

I very much appreciate the opportunity to comment on this subject from a regional banker's point of view.

As a point of reference, the Ohio Company is a full-line regional investment banking firm founded in 1927. We have more than 400 em-

ployees in 45 offices in 7 States, and are capitalized at about $35 million. We are members of all the national securities associations and also the major exchanges in which transactions occur, along with the Midwest Clearing Corp. and the Midwest Securities Trust Company.

I would like to discuss our view on how the financial services industry of tomorrow will participate in an economy undergoing revolutionary technological change.

Dramatic scientific advancement has produced new industries undergoing monumental growth. Computers, telecommunications and biological engineering are the high technology industries leading this revolution, which is producing a revolution both in the way we in the financial services industry do business, and in the demand for capital to finance the high technology world of tomorrow.

At the consumer level this is an exciting time. In the past 5 years, new worlds of financial markets have opened to individual customers. Electronic banking and investment services and 24-hour deposit and withdrawal systems with handy credit and debit cards have created a veritable financial supermarket. Consumers of the future will not just appreciate, but will demand these services.

Beyond the effect high technology has had on the financial services industry, it clearly is a far broader movement affecting communications, medicine, leisure time activities, and in fact, all areas of modern life.

Hundreds of thousands of technical minds across the United States are working on new applications for high technology which will continue over several decades to change the face of American life. But while we thrill at the fact that the good old American ingenuity is thriving once again, we must also remember that it will take enormous amounts of capital to bring the products of this ingenuity into place.

High technology production processes are capital intensive. This has to do with the very nature of these industries. They are based on scientific and technological revolutions which occur more and more frequently as the industry develops.

Innovation and technological change is the very condition for survival in the high technology industry. This puts great financial strains on high technology firms for two reasons. First, huge research and development expenditures are required for both product and production process innovation, both of which are needed for survival in growth. Second, huge expenditures on production equipment are also required due to the frequency with which production equipment becomes obsolete. It is unlikely that these capital needs can be generated internally.

But as demanding of capital as they are, high technology industries are the only hope for sustained domestic economic growth for the remainder of this century. It is important, therefore, that their capital needs be met.

Though it is not really possible to put a dollar figure on the needs of these emerging industries, it can be said with certainty that high technology's need for capital is far greater per dollar of revenue than for most other industries. High technology companies will be turning to the financial services industry—and to investment banking houses in particular—for the large amounts of capital that will be needed.

This process involves traditional kinds of financing, both debt and equity. But unlike big "smokestack" industries of the recent past, it involves more and more smaller companies which are less sophisticated financially. For these companies, the regional investment banking firm frequently is the point of access to the financial marketplace. The high-technology entrepreneur is far more likely to seek financing for his venture at home than in New York.

The net result of all this showed up in the first quarter of 1983. From January to March 1983, more than 120 small-to-medium firms—many of them high-tech firms—went public, raising a record $2 billion. These initial public offerings constituted nearly 25 percent of all equity financing for the first quarter of 1983, and capital being raised by new companies has increased substantially relative to mature companies.

Because of the structural changes mentioned above, the investment banking community will play an increasingly important role in helping these high technology companies so vital to our present and future economic well-being and in satisfying their present and future capital needs.

To help bring order to financing the growth of smaller companies, the National Association of Securities Dealers has emerged with responsibility for regulating and overseeing the over-the-counter securities market. It was established under the authority granted by the 1938 Maloney Act amendments to the Securities Exchange Act of 1934.

As of June 1, 1981, NASD's membership totaled 3,081 broker-dealers, or approximately 90 percent of all broker-dealers in this country doing business with the public.

The association also operates the NASD automated quotation system through a subsidiary company called NASDAQ, Inc. It already operates with a high technology, computerized system which stores up-to-the-minute price quotations for a nationwide network of dealers for more than 3,462 stocks, both domestic and foreign securities such as common and preferred stocks, warrants, and convertible debentures.

Through the facilities of NASDAQ, broker-dealers retailing over-the-counter securities to the public, as well as professional traders and investors, have immediate access to the quotations of all dealers making markets on the NASDAQ system.

Because of the increasing demand, I believe that 24-hour markets will be a reality within a few years. NASDAQ is ready for that change. The system already in place through NASDAQ can be put into 24-hour operation without major structural changes.

The NASDAQ system and the broker-dealers who compromise it are correctly positioned to carry out a major share of the responsibility of financing technological change in this country. They have the technical capacity and informed regional knowledge necessary to meet high-technology entrepreneurs on their home grounds.

I want to leave you with my view of the role of the U.S. Government in this process.

The amount of capital that an economy is able to make available to industry, and industry's ability to appropriate it and use it, are dependent on many variables, economic and noneconomic. Some of these variables are Government policies.

The Federal Government will play a major role in the future growth of high technology through what it does to set and regulate the financial structure that is needed. Of critical importance is what Government does in the area of tax law, securities law, and financial regulation. It is vital that Government decisions are determined by their effect on the overall economy rather than by the convenience of government agencies involved.

For example, the new requirement of registration of municipal bonds was conceived by the Internal Revenue Service, and from its point of view gives far greater information for tax purposes. However, this information is expensive, estimated at one-fourth to one-half a percent on the interest rate on those bonds which municipalities pay. That's expensive convenience which reduces the available pool of investment funds.

I'm not here to debate that issue, but in the future Congress will be called upon to take many steps which regulators will argue are dictated by the fast-changing world of high technology. What I mean to suggest is that decisions in these areas should be based on the needs of the public, expressed through the marketplace. They must not act to slow the movement of high technology needlessly.

If overregulation does slow the change to high technology, those who suffer will be the consumers who need and want the products, and working people whose future lies in high-technology industries.

Similarly, local governments will be called upon to play a major role in nurturing new high-technology companies. To every extent possible, they should be left unencumbered to do the job.

Congressman Wylie and members of the committee, high technology is leaving its imprint on the world of financial services as well as on every other aspect of our economy. It offers a world of services that the consuming public wants and needs. It will require billions of investment dollars to do the job, and our industry is well poised to meet that challenge.

We look forward to working with you in government to make it happen successfully, with proper safeguards, for the benefit of a nation already behind schedule in the transition from a smokestack to a high-technology economy.

Thank you.

Representative WYLIE. Thank you very much, Mr. Chambers, for your very knowledgeable and practical statement. You've given us much to think on.

Congresswoman Snowe has been here almost from the beginning, and I think I will exercise the prerogative of the Chair and say ladies first on the questions.

Representative SNOWE. Thank you, Congressman Wylie. I want to thank all the panelists here this morning for some very fascinating testimony. I'm not sure that I can digest it all and comprehend what the future of this Nation and the world will be.

I would like to begin with Mr. Naisbitt. In talking about several of the points that you made in your testimony, I think it was probably good news for Representative Lungren who comes from California and perhaps bad news for people like myself who come from the

Northeast, the State of Maine, and Congressman Wylie from the State of Ohio.

On your point No. 6, which I thought was an interesting one, you're saying that the economic growth and development is going to occur in the Southwest quadrant of this country.

Mr. NAISBITT. Is occurring, Congresswoman.

Representative SNOWE. Is occurring and will occur. I guess that is what concerns me, as to how the Northeast and Midwest will be incorporated in this new growth. I would like to give you the example of the State of Massachusetts.

In 1976 it had the fifth highest unemployment rate in the United States. It lost its shoe industry to Italy, its watches to Switzerland and Hong Kong, and its textiles to the South in this country. Yet, today, Massachusetts has one of the lowest unemployment rates in the country. I think it ranks No. 43, and we all know Route 128, which surrounds Boston, is abundant with high-technology industries. How do you account for that development in a State like Massachusetts located in the Northeast region of our country and how do you account for what is going to happen for all the other regions of the country as well in this new growth development in our economy?

Mr. NAISBITT. Let me just say first, Congresswoman Snowe, as I talk around the country I usually ask that smokers go first because they have less time. [Laughter.]

In any case, a trend, of course, is not destiny. Massachusetts is the great example. First of all, the Boston area is the biggest city by far that is shifting from the old economy to the new. Let me just suggest, though, that Boston has a lot of attractiveness on the quality-of-life scale to compensate for a not altogether wonderful climate. In the neighborhood of Boston there are 65 colleges and universities. It's arguably our greatest concentration of culture in this country. That partly accounts for that.

Take Lowell, Mass. Lowell is probably the most popular example because Lowell, Mass., was the cradle of the industrial revolution in this country, and now it has lost all of that. As you said, textiles went South. By the way, everyone's favorite example of moving South is textiles. That turns out to be the only example, just in passing. Lowell now is the world headquarters for Wang, one of the great leaders in the industrial period that has shifted to the new economy.

It can be done. It is going to be much more difficult, though, for a city that doesn't have a wonderful climate, doesn't have good schools, doesn't have cultural opportunities to compete with those parts of the country that do when we can locate a new enterprise anywhere we want to locate an enterprise. It is not destiny, but it is going to be sure tough to do.

I think if Erie continues to be Erie and Buffalo continues to be Buffalo and Cleveland continues to be Cleveland, they will continue in decline. They can be reversed if they are reconceptualized and if there are tradeoffs that make them more attractive than the alternatives.

Representative SNOWE. If the shift is occurring in our economy, and certainly it is, and it is happening in certain areas of our country and not others, isn't that all the more reason for some sort of policy from the National Government?

I would also ask Mr. Leveson, Mr. Fisher, and Mr. Chambers to respond to this.

Mr. NAISBITT. I would just argue against that, because I think that's an intrusion in the marketplace that penalizes the rest of the marketplace.

Mr. LEVESON. Let me make a couple of comments using Boston as an example. There are at least three major developments going on simultaneously. One is there has been a trend in the entire postwar period toward growth concentrated in the South and West, and particularly the Southwest, and that is likely to continue. It is increasingly being driven by lifestyle concerns rather than labor cost differentials and other production oriented factors.

Second, there is a lesson to be learned from depressed areas of the past, that after a difficult adjustment goes for a number of years where wages have fallen relative to what they were and come more in line with the rest of the country, where people have been willing to change their ways because they have no other alternative, the bounce back can be quite dramatic.

The long term decline in textiles in Massachusetts and its response with the creation of whole new industries illustrates that point.

There are many other examples—Cape Kennedy after the space shot. Many others.

Third, New England was in an extreme' fortunate position, having a concentration of human capital related industries, having a concentration in the Boston area of universities; related R&D industries developed.

We're in a process in which the economies throughout the country are maturing. The most rapid growth in employment in the last 30 years in the rapid growth areas of our country has been in financial services, not in manufacturing, because we have been developing regional financial firms instead of going only to the national headquarters.

The same thing is happening in regional theater, it's happening in R&D with new belts not only in California but Texas and Georgia and other places. That process is going to continue as we spread out the centers of excellence and develop more and more centers of excellence as the economies of regions throughout the country mature.

There is a tendency in early stages of that development process for manufacturing facilities to locate close to the expertise. As the production becomes more routine it will both spread geographically within the United States and spread out to other parts of the world. Our ability to keep growing jobs and keep up our competitive position internationally depends on constantly staying one step ahead in these new technologies.

History has shown that we have been able to use that very effectively to grow. For example, up until several years ago we exported more steel than we imported, but we exported it because International Harvester was selling tractors, and in other ways we were using our specialized knowledge, our technologies to sell products.

I think once again as the United States becomes in the forefront of this new wave of technologies, albeit sharing the limelight with Japan and maybe others, as we move decisively ahead with these new oppor-

tunities we will be able to stay one step ahead more often, and have enough of the jobs in the early phases here, replenished by new jobs that are being generated.

Representative WYLIE. Would the gentle lady yield?

Representative SNOWE. Yes, I would be glad to yield.

Representative WYLIE. Mr. Leveson has indicated that he had a plane to catch to go to another town. That's why I'm intervening right here.

You said in your statement and sort of indicated it here that the jobs of the future will be in the electronics and computer fields, and that means a lot of jobs for scientists and technicians and engineers and mathematicians. What about the unskilled worker?

Mr. LEVESON. Let me clarify that. First, the early stages of this new wave of technologies are concentrated in computers and telecommunications. At later stages we will see more and more of the job growth in materials and biotechnologies and other areas.

I emphasize the fact that there are many spinoff jobs created as a result of the direct development of scientific employment. The ability to have efficient production processes is the result of new technologies. It means that we are more able to compete internationally.

But the ability to generate new products means there are demands that generate jobs directly in manufacturing. We have seen the development of new industries within old industries: General Motors entree into robotics; the growth of speciality steels, speciality chemicals, speciality paper products at a time when basic material production systems have increasingly been challenged by Third World competition.

We have seen all sorts of new corners of industries developing based on high technology and modern management, and those corners will grow and eventually become the major components of some of our larger industrial firms at the same time as the smaller firms continue to outperform the larger firms.

We will develop many jobs in distribution. We have telephone stores, cable installers, computer stores, one type of new venture after another. The most rapidly growing occupation in the United States is what the Bureau of Labor Statistics calls other repair services, as anyone who also has a live-in copier repair person will attest.

So there are many new jobs in distribution, in repair, in support activities, financial services, advertising, other kinds of services which will go along.

For workers at the bottom of the ladder this has meant a particularly difficult adjustment because we've had a severe recession, trying to turn around a 25-year trend of rising inflation, and that is a problem which is going to take a while to work off.

For the mature workers in the industrial areas of the country, the process is going to be extremely difficult. We are going to see some call backs, as we already have. Capacity utilization in manufacturing has recovered essentially one-fifth of the idleness that it had, just since last fall. We'll see some additional call backs, but there will be many personal adjustments. Many workers will have to go into other kinds of work where they can't earn the same salaries. And I think the steel industry has a special problem, because we're talking about $18 labor and not $12 labor like the automobile industry.

Representative WYLIE. Thank you very much.

Congressman Lungren has chaired two hearings on the subject of industrial policy.

Congressman Lungren, would you like to proceed with questions at this point?

Representative LUNGREN. Thank you very much, Congressman Wylie.

Mr. Naisbitt, I first was introduced to your thoughts in your books when I happened to catch you on the "Today Show" a number of months ago. One of the points that you made at that time struck me as rather important as we talk on this issue and the related issue of a type of national industrial policy that we might pursue, if any.

You talked about one idea that trends are bottom up and that fads are top down, that the true changes that we see taking place in our society and our economy are coming from the grass roots.

That concept poses a question, which is how do you respond to those who suggest we need a national industrial policy because changes are taking place? And a centerpiece of that national industrial policy would be some sort of planning commission. Of course, they always use caveats on that: "This would not be mandatory, but it would somehow be voluntary." Well, we know how that works when government gets involved in it. That somehow we would have this board that would devine what the changes are and would then direct or influence or somehow suggest that capital go in particular areas and be taken away from other areas, whether they be winners or losers.

Mr. NAISBITT. As you describe it, Congressman Lungren, I think such an arrangement would be disastrous. It is difficult enough, but possible, to plan during stable periods, because we are during stable periods fairly momentum driven, and that is why during stable periods the economists serve us pretty well; they come pretty close. It's just when we need them most, during unstable periods, that they seem always to be wrong.

We are in such a complicated stage, as I said in my testimony, that we are not only changing as we have not done for 150 years from one economy to another, but we are changing from a national economy to part of a global economy. The dynamics of that are so complex I think we have to allow the marketplace to sort that out. I don't see how any of us can presume to sort it out ourselves.

I think we have to live through this shakeup period. This is not a recovery; this is the new economy overtaking the old economy. It's much stronger than a recovery. I think our concern about an industrial policy is going to recede as we see the strength of this new economy that is overtaking the old.

Representative LUNGREN. You don't think that the best and the brightest are here in Washington to try to figure that out?

Mr. NAISBITT. Well, that's part of the problem. [Laughter.]

Representative LUNGREN. I won't be offended if you say the best and the brightest are not here, because I agree with you.

Mr. NAISBITT. Well, I think that is part of the problem. I'm just back from Japan. I spent some time there and studied that somewhat. We walk around with a very old-fashioned idea about MITI, for example, and it's partly because so many business people in this

country are using Japan as a scapegoat for their own shortsightedness in not seeing what was occurring in the world. MITI today has very little to say really about the economic vitality of Japan. In the 1950's when it was started, and into the 1960's somewhat, it did. But that has receded tremendously. Besides which, do we want to make our MITI here, for example?

The point is that in Japan the very best and the very brightest do go into government. That is simply not true in this society. MITI people dealing, say, with our Department of Commerce are not dealing really with any kind of equal partner. They have a tremendous advantage, because the very best and brightest do go into government in Japan.

Representative LUNGREN. Our hearings last week, as a matter of fact, focused on the Japanese experience, and the point that was made by all of the panelists at that time was that when Japan came out of World War II they were flat on their backs, they had to reindustrialize, and they had a fairly simple game plan. They followed what the United States had done. They were suggesting that it would be silly for us now to try and follow what Japan has done since that is not necessarily a blueprint or a lesson for the future, and that MITI's influence in their national economy has diminished precisely because they have become a far more mature economy; that in pursuing such a course, we would be making a mistake.

Just 3 weeks ago I drove my family back to California, and I will tell you it's a great experience for anybody because I wasn't able to read the New York Times or the Los Angeles Times or the Washington Post or watch national television, and when you do that you get a pretty good feeling about America. You also get an idea of the diversity of this country.

I think, Mr. Chambers, you mentioned that there has been a move toward decentralization of finances in the sense that you have a lot of small companies starting up in different regions. I wonder if that will be part of a greater trend that has been suggested by Mr. Leveson and Mr. Naisbitt. Would you agree that as you go to a more information and computer based economy, doesn't that break down the need for virtually all of your major companies to be located in a similar location, that is, to move toward the big metropolises? And doesn't that suggest that we might see a revival of the smaller communities as places for economic activity so that maybe we don't have to say everyone is coming to California?

Isn't that something we ought to be looking at and isn't that a positive sign with respect to the smaller communities and the nonmegalopolises of the United States?

Mr. NAISBITT. I would certainly agree with that. In fact that is occurring. One of the most important things demonstrated to us in the 1980 census was that what was happening in this country, in all parts of the country, the North and the East and the South and the West, in all parts of the country what is happening is the spreading and the thinning of the population. We are moving from the cities to the suburbs and from the suburbs to exurbia and exurbia to rural. For the first time in 200 years and during the 1970's there were more people that moved to rural areas than moved into the cities, and the spreading and thinning of the population is continuing.

I might add on the geographical front about the quality of life that we talked about, that Congresswoman Snowe was asking about. That is not alone the Sun Belt. There are other locations in this country that are famous for their quality of life where an interesting percentage of people like to go: Minneapolis, Seattle; and certainly Maine, I think, is one of those places that have a quality of life that attracts a sufficient number of people who really want to live there despite some harsh winters.

So it needn't be the so-called Sun Belt, which isn't the Sun Belt in any case; it's the Southwest and Florida.

Representative LUNGREN. Mr. Leveson, I know you have to leave. Let me just ask you one question, and that is with respect to jobs.

You've stated that the information revolution will not destroy more jobs than it creates. Could you elaborate on that a little bit? One of the concerns we've had with some of the panelists is that it sounds good to make sure that we do not interfere with this trend toward service or information industries, and in fact someone suggested that we accelerate it. But what happens to the workers left behind? Indeed, will there be workers left behind? And if we accelerate it, will it mean that more workers would be left behind?

Mr. LEVESON. First of all, in terms of the overall labor balance, we've gone through an extraordinary period since 1962 where for 17 years in a row we created 2 million new jobs a year. The rest of the world is trying to figure out how de did it.

My view is that that growth was to a significant extent the result of the problems that we had during the same period; that is, not only did we have a lot of new entrants in the labor force, both women and youth, on the supply side, and that depressed starting salaries, for example, encouraged greater employment, but also we had a tremendous bias in the changes taking place in the economy in ways that encouraged demand for labor. The energy cost increases meant that the capital-intensive manufacturing processes were less efficient and the higher prices encouraged shifts in demand to other goods and services as well as changes in production methods. Similarly, the effects of inflation, particularly the tax effects of inflation, and a preponderance of the effects of regulation, I think, were particularly great on capital-intensive industries, creating a shift in demand toward labor.

That process has now been reversing. We have a slower growth in supplies of labor as we passed the peak entrance rate for the youth generation and we are in a period of what will be increasingly a tapering off of the rate of growth of the female labor force participation. At the same time that the slower growth in labor supplies comes we will also get slower growth in demand than we might otherwise have had as result of automation.

The net will be a new balance, which is not worse than we have had before. But on top of that picture is the large structural unemployment associated with the recession and with the industry shifts. That is going to take the rest of the decade to work off. We are going to be in a period with an aggregate labor balance that is not dramatically different than what we've had in terms of the interplay of forces, where we have much more churning going on as well as an overhang of unemployment to start with, and that is going to be a very difficult process to work through. But it is a price which is

worth it in terms of going back to an economy that has rising real incomes, rising opportunities for individuals.

Let me just make one or two quick comments on other things that have come up here, if I may.

While I agree with what John Naisbitt said on geographic decentralization, and I think those trends will continue, I think that the worst of the decline in population in the larger older central cities is over, and that decline will end sometime during this decade. We are going to wind up in any case with a very substantial share of our population in major cities. Whether it's 30 or 50 percent, how you count it isn't the point, but we do have to be concerned about what happens in those cities.

We've gone through major downtown revivals; we've provided very important tax incentives; and we are starting to see the spread, even in the midst of a recession, partly because of tax programs, partly because of government housing programs, but in a very large part because of private initiative and the fact that the prices have changed to make things more attractive, of that renewal process of cities into the residential rings surrounding the business districts, and that, I think, it is going to be a very important part of this revitalization process.

A point was raised earlier about what we can do to finance high-technology industries, and I would like to suggest that a careful look will find a variety of things that can be done.

Right now we have the IRS telling a very small businessman that the funds that he borrows that are put in a business are equity rather than debt and he can't deduct the interest. We have prudent man rules that discourage risktaking on the part of private pensions. We talk a lot about the effect of deregulation in financial services on consumers. As we move from the startup situation to large-scale development in many new industries, the single biggest advantage of financial deregulation will be in letting the banks do the same kinds of things that the investment banking firms are doing and provide a major source of equity-based and other forms of risk capital to industry.

So I think there are many things that we can do that will continue to establish rules of the game, that will facilitate individual choices in directions that will help the economy without having to have the Government be the decisionmaker over the particular way in which jobs get created.

Representative WYLIE. Mr. Leveson, we may want Mr. Fisher and Mr. Chambers to comment on that last statement in just a moment, but I know you have to leave.

I saw your quote in the U.S. News and World Report where you said that the American standard of living will improve as far as the eye can see. I share your optimism on that score.

Thank you very much for coming this morning. You did us a great service.

Mr. LEVESON. Thank you. I'm glad to be here.

Representative WYLIE. You may be excused to catch your plane.

Mr. Chambers, would you care to comment on the statement that Mr. Leveson made that we should let the banks do some things that the securities industry is now doing so we will get more competition?

Mr. CHAMBERS. I think we have already probably embarked on that journey some time back and have crossed paths many times.

I do believe that in many respects the commercial banks already do a great service in the early stages of development of small entrepreneurial activities. I guess the same line comes back, where do you call the starting point and the stopping point on endangering the depositors' funds. The investment bankers are in the business of risk-taking, and perhaps all of us should take a look at what areas we serve in the economy, what our purposes are, and perhaps stick more to our knitting.

I think there will always be a question as to how you protect the depositors in commercial banks versus the activities that are performed.

However, as I indicated earlier, I think there is a tremendous need all over the country for the venture-capital type of investment, the assistance for the small emerging company that perhaps does not excite a New York investment banker, but somehow they have to get from step A to step B to step C, and one of our functions in the regional investment banking firms has been over the years to take those companies from the initial steps and proceed forward.

I think, as you have observed, what is happening in the venture-capital area, for instance, in the last 2 years is that you will see people are trying to accommodate the need. In our own State, for instance, and in our own firm we have set up a venture-capital fund which has been contributed to or invested in by half a dozen entities, some of which are our own State pension funds.

We are looking at new emerging companies all over the country, but specifically in Ohio, to help those people get to a point at which some time down the road they will be able to go into the public markets and provide capital formation.

I think, as I believe Mr. Leveson mentioned a minute ago, some of the controls that emerge over a period of time that are detrimental to those kinds of capital formation can be avoided through watching the kind of legislation that occurs and the kind of regulation that is brought about by the regulatory bodies. I think the capital formation is going to be much more difficult than obtaining the appropriate kinds of labor forces.

On that subject, I think there will be some difficulty with the transition of workers who have been out of work for 1 year, 2 years, or more, in industries that will not be calling them back, and putting them in a position to either move geographically to obtain employment or to become able to involve themselves in a different type of industry.

I don't at all share the view that the older portions of the country and the northern portions, northeastern portions, are going to continue to suffer tremendous drains of population. We see somewhat of a change occurring in our own area, Congressman Wylie. I think many people find the quality of life in the Midwest, once they have arrived there, much surpassing some of the other areas of the country, which has had a great influx of population over the past decade.

So I have some continuing feelings that many of the older parts of this country will survive and will continue to prosper with the new technology. As my friend Mr. Fisher mentioned earlier, we sort of have

a very exciting technological center in the center of Ohio and I think in many other places across the country.

Thank you.

Representative WYLIE. Thank you.

Mr. Fisher, did you wish to comment on that?

Mr. FISHER. Congressman Wylie, I would comment about Mr. Leveson's remarks just briefly. I think it is a little early to predict the industry yet, but I would imagine that American bankers will be very supportive of the recently introduced administration proposal for further deregulation of our industry. I'm specifically talking about the Treasury introduced legislation within the last couple of weeks. Clearly the marketplace, both commercial and consumer, will be served to a greater extent as we enhance the competition and permit further movements in toward the investment, brokerage, and insurance business.

While I have the microphone I would like to comment on a question that Congressman Lungren asked Mr. Leveson just as he left, and it had to do with your comment about would old workers be left behind as this new high technology creates new kinds of jobs in unique places in our country.

I am only an observer, not a student. But not too long ago I was in a small Ontario town, a population of maybe 400, the economy based on the lumber and the lakes and rivers of that area. I brefriended an individual up there who recently graduated from high school, and he is the only survivor of 10 graduates of his high school class that is still in that area.

I asked him what happened to the other nine. He said, well, four had moved to Toronto to find work; three had moved to Germany; one to South America. The Ontarians, in order to find work of their choice and liking, were willing to go find work, and it meant in their cases to give up even their nationality. Now it struck me that I don't know that is what we in America are going to do, but I do think the mentality of our work force will have to be minorly modified over time. I think we do have the mentality today that business and government are supposed to bring jobs to where the worker is, and I think we have done a very good job in that area. But I think the mentality will have to switch minorly so that the worker will have to be quite willing, as the Canadian I've just demonstrated, to go find a job.

Representative WYLIE. Mr. Chambers, I might try to get a little advance investment opportunity information here from you. Will the personal computer with the home terminal and computer time sharing devices which Mr. Fisher mentioned here a little earlier actually replace the automobile as a major expenditure to go to the bank or to go to the company to talk with somebody? It has been suggested that we will be able to do this from our living room or kitchen and that maybe we won't need the automobile, and that it might come into the forefront after housing and education as one of our major growth industries.

How do you see that?

Mr. CHAMBERS. Well, I think as a long-term proposition, Congressman Wylie, the direction is certainly away from spending the day traveling through traffic and stopping at many different areas to take

care of the family's business. As we look at two-income families, the time available for those kinds of activities seems to be shrinking on an annual basis. I think as we look at what has been happening and what will probably continue to happen is that people will become more comfortable with the use of the computer.

I think one of the major experiments that Mr. Fisher's bank conducted went rather well a few years ago in using the computer provided in home to make deposits, to pay bills, and all those kinds of functions.

In our own business, I believe that those people who have a familiarity with it would certainly see the time when it would be possible to have advanced in technology to the point where you can make transactions on the computer merely by punching the button and taking the offering that is on there and the transaction is effected. I think those kinds of activities will continue to grow as we continue to increase and expand the services available to the public.

We presently in our industry have the registered representatives or the account executives scattered all over a territory and have the ability for them to obtain quotes on their equipment, to get messages from the home office, to access the information that is available on a person's account without talking to anyone and just sitting there with their computer.

I think the answer is yes, there will be a trend continuing in that direction, both in commercial and investment banking.

Representative WYLIE. Thank you.

Mr. Fisher, Banc One has been a real leader in the home-terminal idea. You were quite helpful when we were drawing up legislation in the House Banking Committee on the electronic funds transfers. We tried in every way we knew how to provide safeguards. Considering the considerable amount of precaution that has to be taken to prevent the unauthorized use of the funds, can the electronic funds transfer system and the home terminal be cost efficient?

Mr. FISHER. The anticipation in my industry is that the delivery of financial services in the home by, let's say, the end of the decade will be about where we are today with the acceptance and the cost efficiency of delivering services through automatic teller machines. What I am saying is the automatic teller machine is in its 13th year. Home delivery will be in about its fifth year by the end of this decade from a maturing standpoint, and I believe those will be somewhat similar in their acceptance in the marketplace, and therefore their cost efficiency to the industry.

The anticipation is it will be able to deliver services more conveniently and at a lower cost and be able to invent more worthwhile services with this home delivery capability than the bricks and mortar distribution systems that have been so popular over the last 50 years.

So the anticipation is, and it is our firm belief that, home delivery will be a very cost efficient way for my industry and for the consumer to receive transactional and financial services.

Representative WYLIE. I bring that up because I'm not sure whether it was Mr. Naisbitt or Mr. Leveson who suggested that this savings, if there be a savings, might not be passed on to the consumer; it might not be as good for the consumer initially as is anticipated.

Mr. NAISBITT. I did not say that. I do not believe that.

Representative WYLIE. I will rephrase it. I'll put it this way. In your opinion, will the use of the electronic funds bring about cost savings in providing banking services which will be passed on to the consumer? I'm sure that your answer to that will be yes, but you might want to tell us why.

Mr. FISHER. It is my belief that these new electronic distribution systems will protect the consumer from runaway high costs. Sometimes, I believe Detroit failed to protect the American society from runaway high costs; they really didn't anticipate the kinds of changes or build the kinds of distribution system that was necessary to transport America the way it needs to be transported.

So it is our belief that the banking industry is struggling hard, and has been for the last decade, to invent new ways to deliver the kinds of financial requirements that the marketplace has at a low cost and therefore continue to invest in these new systems to protect from the high costs of the future.

The branching mechanism in commercial banking today has about 50,000 branches, and our kin in the industry, the savings and loans and credit unions and mutuals, have about another 50,000. So 100,000 storefronts in America today distribute basically the depository services.

If there is no change given to that distribution system in the future, clearly the marketplace will have to continue to pay more and more for the same kinds of services. It is through the invention of these new distribution systems, such as the VIDEOTEX phenomenon that I testified about, that we will protect the marketplace from runaway high costs.

I believe, therefore, that we can see that there will be a sharing of the costs saved between the industry and the consumer in the future.

Representative WYLIE. Thank you.

Mr. Naisbitt, I can't help commenting on your reference to lawyers in your book, since I am one, although I'm not practicing right now. I think there was something you said along the lines that lawyers are like beavers. They dam up the flow of the stream.

Mr. NAISBITT. They get in the mainstream and dam it up.

Representative WYLIE. Well, I come from sort of farm community, and we noticed that when those beavers dammed it up that that was the source of fish, too. [Laughter.]

Also, some of the water spilled over into the surrounding countryside and it was a little more fertile around that lake those beavers created.

In any event, I thought I would be remiss if I didn't suggest that there might be another side to that.

You also said in your chapter on the world economy that where products are produced in several companies there might be some talk about production sharing with other countries. Is that a desirable trend? Or would that trend lead to U.S. unemployment?

Mr. NAISBITT. I think it is a desirable trend because it is part of what is driving our move into a global economy. Production sharing has been perfected in the state of the art in Japan. Where as I said in the book they have parts made in six or seven different parts of the world,

bringing them together, the only thing actually made in Japan is the label that says "Made in Japan."

In any case, that's really production sharing, where you have parts of equipment or whatever built around the world and then brought together and assembled at some point. It is increasing tremendously.

I think that that will in some ways take some jobs. But you know, the computer is taking jobs. The computer is taking more jobs than we can possibly imagine. There are several million computers in the world today, and those several million computers are doing the work of about 10 trillion people; they are doing the work of people we haven't invented yet. But they are also, just as the textile mills that were attacked by the Luddites, creating a wholly new economy, and I think that is how we have to do it.

Congressman Wylie, I have to go meet with another branch of the Government soon, but if I may I would like to just bear testimony about Columbus before leaving.

I was in Columbus a couple of months ago. I was very impressed with how well positioned Columbus is in this new economy. The only hesitancy I had about it, I was wondering about its really conceptualizing itself as a global city.

That evening I addressed the new Chamber of Commerce World Trade Club that had just been formed, however, and I think that you are well into conceptualizing Columbus as a truly global city. Because what is happening in this country, part of the excitement is we are decentralizing and we are localizing, but at the same time we are localizing we are globalizing, because we deal with the people from where we are. Columbus deals with the world from Columbus, and you are going to do that increasingly, and I think Columbus is going to be an important global city as well as a very important city in this country.

Representative WYLIE. We thank you very much for that testimonial.

Are there other comments? [No response.]

May I say, as the presiding Member of the hearing this morning, I appreciate very much your being here. I know that each of you took considerable effort to do that. You have made a very significant contribution.

I'm sorry there weren't more members of the Joint Economic Committee here. We were told that several others would be here, but they have been calling in saying that they were on the Senate floor, or that they're in hearings. Chairman Volcker was before the House Banking Committee this morning and he was talking about economic trends and will interest rates go up, and when he speaks the country listens.

Anyhow, I think we had an excellent hearing, which will be in the record and we will study it.

We thank you very much for what you did.

The meeting stands adjourned.

[Whereupon, at 11:35 a.m., the committee adjourned, subject to the call of the Chair.]

[The following statement was subsequently supplied for the record:]

U.S. Council for an Open World Economy
INCORPORATED
7216 Stafford Road, Alexandria, Virginia 22307
(202) 785-3772

Statement submitted by David J. Steinberg, President, U.S. Council for an Open World Economy, to the Joint Economic Committee in hearings on industrial policy. (August 30, 1983)

(The U.S. Council for an Open World Economy is a private, non-profit, public-interest organization engaged in research and public education on the merits and problems of developing an open international economic system in the overall national interest. The Council does not in any way act on behalf of any private interest.)

I am a longtime advocate of what many have come to call an "industrial policy" (a term to which I assign a more specialized definition), but which I prefer to call a "national redevelopment strategy." I do not subscribe to any of the propositions I have seen on "industrial policy" even as a broad policy concept. I find them lacking in policy viability, political palatability and, more specifically, in the three respects to which this brief statement is limited.

Needed: A Free-Trade Premise

A properly devised "industrial policy" (in the general sense of a policy to stimulate national industrial growth) should have a suitable international-trade-policy premise. It is inconceivable to me how supposed experts on "industrial policy" formulation can discuss the kind of industrial policy the nation needs without proposing the kind of trade policy the nation needs as an essential ingredient for achieving the best, most enlightened, most durable form of industrial development. Without incisive attention to a suitable trade-policy dimension, discussion of industrial policy becomes an exercise in a vacuum -- hardly what the nation needs at any time, especially at this critical hour.

I submit that the trade policy that would best serve the highest ideals of U.S. industrial growth and overall economic development is a definitive, deliberate, explicitly free-trade strategy aimed, not at unilateral free trade (which is well beyond the pale of realism), but a fully free-and-fair trade charter negotiated by the world's most economically advanced countries under the rules of the General Agreement on Tariffs and Trade (or initially by as many as may care to join the United States in such an initiative). Further details on how to proceed on this trade-policy track appear in statements I have submitted to other Congressional

committees and in other forums. I would be glad to present my views in greater detail to the Joint Economic Committee at an appropriate time.

Government Reorganization for Economic Redevelopment

To dramatize the nation's need for incisive attention to economic redevelopment and to strengthening our international competitiveness, and to maximize the government's preparedness for dealing coherently and constructively with these issues, an inter-agency council on national economic development should be established equal in stature to the National Security Council. The President should be its chairman, and a special assistant to the President for national economic development should be its full-time executive vice-chairman, with Cabinet rank but not already head of a government agency, nor permitted to hold both jobs in the future. He or she should be subject to Senate confirmation. The Department of Commerce's main responsibility in this framework should be administration of whatever role the government assumes in helping U.S. manufacturing and service industries adjust to new international realities. The Departments of Agriculture, Interior, Labor, Transportation, Education, etc. should have corresponding responsibilities in their respective areas of jurisdiction.

The council should maintain close, productive liaison (a) with the private sector through properly designed advisory committees associated with the government agencies holding major responsibilities in the respective fields, and (b) with state and local governments, including specifically the governors of the 50 states. The council should be required to submit an annual report to Congress on the progress and problems of national economic redevelopment, and Congress should be required to hold hearings on this report.

"Import Relief" as an Industrial-Policy Instrument

As I have argued in presentations to the House Committee on Ways and Means, the time has come to stop the "pig-in-a-poke" approach to import relief that has all along -- and too long -- characterized the granting of import restriction to ailing industries able to prove serious injury (or threat thereof) from imports. Trade restriction of any kind, if justifiable at all, should be only one component (indeed the measure of last resort) in a balanced, coherent, comprehensive, systematically monitored "industrial policy" addressing the real problems and needs of the affected industry. (This is my more specialized use of the term "industrial policy".) Government has a role to play in such a policy, but strictly accountable commitments by management and labor should be important parts of the industrial-adjustment

strategy.

Government action should include assessment of all statutes and regulations materially affecting the adjustment capabilities of these industries, to determine if there are any inequities that impair such capability. Any inequities should be corrected with deliberate speed. The redevelopment strategy for a particular industry should be the subject of annual Congressional review for as long as there are any measures of government assistance -- to determine the need and cost of continued government aid, and whether the aid provided is suitable and adequate for the stated objective.

In the interest of brevity, I have confined this statement on "industrial policy" to the above propositions, and have limited my discussion of these proposals to broad outlines of concepts and procedures.

○